

MELSEC-Q/L Structured Programming Manual

Special Instructions



(Always read these instructions before using this product.)

Before using the MELSEC-Q series and MELSEC-L series programmable controllers, thoroughly read the manuals attached to the products and the relevant manuals introduced in the attached manuals. Also pay careful attention to safety and handle the products properly.

Please keep this manual in a place where it is accessible when required and always forward it to the end user.

● CONDITIONS OF USE FOR THE PRODUCT●

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
 i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

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Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

The manual number is written at the bottom left of the back cover.

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INTRODUCTION

Thank you for purchasing the Mitsubishi MELSEC-Q series programmable controller. Before using the product, thoroughly read this manual to develop full familiarity with the programming specifications to ensure correct use.

Please forward this manual to the end user.

CONTENTS

SAFETY PRECAUTIONS	A - 1
CONDITIONS OF USE FOR THE PRODUCT	A - 2
REVISIONS	A - 3
INTRODUCTION	A - 4
CONTENTS	A - 4
MANUALS	A - 8

1. OVERVIEW	1 - 1 to 1 - 10
1.1 Purpose of This Manual	1 - 2
1.2 Generic Terms and Abbreviations in This Manual	1 - 4
1.3 Explanation Contents in This Manual	1 - 5
1.4 Modules and Versions Applicable to Instructions	1 - 7

2. INSTRUCTION TABLES	2 - 1 to 2 - 14
2.1 How to Read Instruction Tables	2 - 2
2.2 Module Dedicated Instruction	2 - 3
2.2.1 Analog instruction	
2.2.2 Serial communication and modem interface instruction	
2.2.3 CC-Link instruction	
2.2.4 CC-Link IE controller network, MELSECNET/H, and Ethernet instruction	
2.2.5 Positioning instruction	
2.3 PID Control Instruction	2 - 9
2.3.1 PID control instruction (inexact differential)	
2.3.2 PID control instruction (exact differential)	
2.4 Socket Communication Function Instruction	2 - 10
2.5 Built-in I/O Function Instruction	2 - 11
2.5.1 Positioning function dedicated instruction	
2.5.2 Counter function dedicated instruction	
2.6 Data Logging Function Instruction	2 - 14
3. CONFIGURATION OF INSTRUCTIONS	3 - 1 to 3 - 4
3.1 Configuration of Instructions	3 - 2
4. HOW TO READ INSTRUCTIONS	4 - 1 to 4 - 4

5. MOD	ULE DEDICATED INSTRUCTION	5 - 1 to 5 - 246
5.1 An	alog Instruction	5 - 2
5.1.1	OFFGAN instruction	
5.1.2	OGLOAD instruction	5 - 4
5.1.3	OGSTOR instruction	5 - 31
5.2 Se	rial Communication and Modem Interface Instruction	5 - 60
5.2.1	ONDEMAND instruction	
5.2.2	OUTPUT instruction	
5.2.3	INPUT instruction	
5.2.4	BIDOUT instruction	
5.2.5	BIDIN instruction	
5.2.6	SPBUSY instruction	
5.2.7	CSET instruction (receive data clear)	
5.2.8	BUFRCVS instruction	
5.2.9	PRR instruction	
5.2.10	CSET instruction (initial setting)	
5.2.11	CSET instruction (programmable controller CPU monitor)	
5.2.12	PUTE instruction	5 - 97
5.2.13	GETE instruction	5 - 100
5.2.14	UINI instruction	5 - 103
5.3 CC	-Link Instruction	5 - 108
5.3.1	RIRD instruction	
5.3.2	RIWT instruction	5 - 113
5.3.3	RIRCV instruction	5 - 118
5.3.4	RISEND instruction	
5.3.5	RIFR instruction	5 - 126
5.3.6	RITO instruction	5 - 128
5.3.7	RLPASET instruction	5 - 130
5.4 CC	-Link IE Controller Network, MELSECNET/H, and Ethernet Instruction	5 - 137
5.4.1	READ instruction	
5.4.2	SREAD instruction	
5.4.3	WRITE instruction	
5.4.4	SWRITE instruction	5 - 153
5.4.5	SEND instruction	5 - 157
5.4.6	RECV instruction	5 - 164
5.4.7	RECVS instruction	5 - 169
5.4.8	REQ instruction	5 - 172
5.4.9	RRUN instruction	5 - 181
5.4.10	RSTOP instruction	5 - 183
5.4.11	RTMRD instruction	5 - 185
5.4.12	RTMWR instruction	5 - 187
5.4.13	REMFR instruction	5 - 190
	REMTO instruction	
	OPEN instruction	
5.4.16	CLOSE instruction	5 - 199
5.4.17	BUFRCV instruction	5 - 202
5.4.18	BUFRCVS instruction	5 - 206
5.4.19	BUFSND instruction	5 - 208
	ERRCLR instruction	
5.4.21	ERRRD instruction	5 - 215

5.4.22 UINI instruction	
5.4.23 MRECV instruction	
5.4.24 MSEND instruction	
5.5 Positioning Instruction	5 - 233
5.5.1 ABRST instruction	
5.5.2 PSTRT instruction	
5.5.3 TEACH instruction	5 - 239
5.5.4 PFWRT instruction	
5.5.5 PINIT instruction	
6. PID CONTROL INSTRUCTION	6 - 1 to 6 - 30
6.1 PID Control Instruction (Inexact Differential)	6 - 2
6.1.1 PIDINIT instruction	
6.1.2 PIDCONT instruction	
6.1.3 PIDSTOP instruction and PIDRUN instruction	6 - 11
6.1.4 PIDPRMW instruction	
6.2 PID Control Instruction (Exact Differential)	6 - 16
6.2.1 PIDINIT instruction	
6.2.2 PIDCONT instruction	6 - 21
6.2.3 PIDSTOP instruction and PIDRUN instruction	
6.2.4 PIDPRMW instruction	
7. SOCKET COMMUNICATION FUNCTION INSTRUCTION	7 - 1 to 7 - 26
7.1 SOCOPEN Instruction	7 - 2
7.2 SOCCLOSE Instruction	7 - 5
7.3 SOCRCV Instruction	7 - 8
7.3 SOCRCV Instruction 7.4 SOCRCVS Instruction	7 - 8 7 - 11
7.4 SOCRCVS Instruction	7 - 11
7.4 SOCRCVS Instruction7.5 SOCSND Instruction	7 - 11 7 - 13
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction	7 - 11 7 - 13 7 - 16
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction	7 - 11 7 - 13 7 - 16 7 - 19
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Desitioning Eugetian Dedicated Instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction 8.1.4 IPOPR instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8. BUILT-IN I/O FUNCTION INSTRUCTION 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction 8.1.4 IPOPR instruction 8.1.5 IPJOG instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2 8 - 2 8 - 3 8 - 3 8 - 3 8 - 6 8 - 7 8 - 9 8 - 11
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction 8.1.4 IPOPR instruction 8.1.5 IPJOG instruction 8.1.6 IPABRST instruction	7 - 11 7 - 13 7 - 16 7 - 19 7 - 22 7 - 22 7 - 24 8 - 1 to 8 - 30 8 - 2 8 - 2 8 - 2 8 - 3 8 - 2 8 - 3 8 - 6 8 - 7 8 - 9 8 - 11 8 - 13
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction 8.1.4 IPOPR instruction 8.1.5 IPJOG instruction 8.1.6 IPABRST instruction 8.1.7 IPSTOP instruction	$\begin{array}{r} 7 - 11 \\ 7 - 13 \\ 7 - 16 \\ 7 - 19 \\ 7 - 22 \\ 7 - 22 \\ 7 - 24 \\ \hline 8 - 1 \text{ to } 8 - 30 \\ \hline 8 - 2 \\ \hline 8 - 2 \\ \hline 8 - 3 \\ \hline 8 - 3 \\ \hline 8 - 6 \\ \hline 8 - 7 \\ \hline 8 - 9 \\ \hline 8 - 11 \\ \hline 8 - 13 \\ \hline 8 - 14 \\ \hline \end{array}$
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction 8.1.4 IPOPR instruction 8.1.5 IPJOG instruction 8.1.6 IPABRST instruction 8.1.7 IPSTOP instruction 8.1.8 IPSPCHG instruction	$\begin{array}{r} 7 - 11 \\ 7 - 13 \\ 7 - 16 \\ 7 - 19 \\ 7 - 22 \\ 7 - 22 \\ 7 - 24 \\ \hline 8 - 1 \text{ to } 8 - 30 \\ \hline 8 - 2 \\ \hline 8 - 2 \\ \hline 8 - 3 \\ \hline 8 - 3 \\ \hline 8 - 6 \\ \hline 8 - 7 \\ \hline 8 - 9 \\ \hline 8 - 11 \\ \hline 8 - 13 \\ \hline 8 - 14 \\ \hline \end{array}$
7.4 SOCRCVS Instruction 7.5 SOCSND Instruction 7.6 SOCCINF Instruction 7.7 SOCCSET Instruction 7.8 SOCRMODE Instruction 7.9 SOCRDATA Instruction 8.1 Positioning Function Dedicated Instruction 8.1.1 IPPSTRT instruction 8.1.2 IPDSTRT instruction 8.1.3 IPSIMUL instruction 8.1.4 IPOPR instruction 8.1.5 IPJOG instruction 8.1.6 IPABRST instruction 8.1.7 IPSTOP instruction 8.1.8 IPSPCHG instruction 8.1.9 IPTPCHG instruction	$\begin{array}{r} 7 - 11 \\ 7 - 13 \\ 7 - 16 \\ 7 - 19 \\ 7 - 22 \\ 7 - 22 \\ 7 - 24 \\ \hline 8 - 1 \text{ to } 8 - 30 \\ \hline 8 - 2 \\ \hline 8 - 2 \\ \hline 8 - 3 \\ \hline 8 - 2 \\ \hline 8 - 3 \\ \hline 8 - 6 \\ \hline 8 - 7 \\ \hline 8 - 9 \\ \hline 8 - 11 \\ \hline 8 - 13 \\ \hline 8 - 13 \\ \hline 8 - 16 \\ \hline 8 - 18 \\ \hline 8 - 18 \\ \hline \end{array}$

8.2.3	ICPREWR instruction	8 - 21
8.2.4	ICLTHRD instruction	8 - 22
8.2.5	ICSMPRD instruction	8 - 23
8.2.6	ICCOVWR instruction	8 - 24
8.2.7	ICFCNT instruction	8 - 25
8.2.8	ICRCNT instruction	8 - 26
8.2.9	ICPLSRD instruction	8 - 27
8.2.10	ICPWM instruction	8 - 28
DATA	A LOGGING FUNCTION INSTRUCTION	9 - 1 to 9 - 4

9. DATA LOGGING FUNCTION INSTRUCTION

9.1 LOGTRG Instruction, LOGTRGR Instruction

9 - 2

INDEX

Index - 1 to Index - 4

MANUALS

Related manuals

The manuals related to this product are shown below.

Refer to the following tables when ordering required manuals.

(1) Structured programming

Manual name	Manual number (Model code)
MELSEC-Q/L/F Structured Programming Manual (Fundamentals)	
Explains the programming method, types of programming languages, and other information required to create	SH-080782ENG
structured programs.	(13JW06)
(Sold separately)	
MELSEC-Q/L Structured Programming Manual (Common Instructions)	
Explains the specifications and functions of common instructions such as sequence instructions, basic instructions,	SH-080783ENG
and application instructions that can be used in structured programs.	(13JW07)
(Sold separately)	
MELSEC-Q/L Structured Programming Manual (Application Functions)	SH-080784ENG
Explains the specifications and functions of application functions that can be used in structured programs.	(13JW08)
(Sold separately)	(100100)

(2) Operation of GX Works2

Manual name	Manual number (Model code)
GX Works2 Version1 Operating Manual (Common) Explains the system configuration of GX Works2 and the functions common to a Simple project and Structured project such as parameter setting, operation method for the online function. (Sold separately)	SH-080779ENG (13JU63)
GX Works2 Version1 Operating Manual (Structured Project) Explains operation methods such as creating and monitoring programs in Structured project of GX Works2. (Sold separately)	SH-080781ENG (13JU65)
GX Works2 Beginner's Manual (Structured Project) Explains fundamental operation methods such as creating, editing, and monitoring programs in Structured project for users inexperienced with GX Works2. (Sold separately)	SH-080788ENG (13JZ23)

The Operating Manuals are included on the CD-ROM of the software package in a PDF file format. Manuals in printed form are sold separately. Order a manual by quoting the manual number (model code) listed in the table above.

(3) Detailed specifications of instructions

Analog instruction

Manual name	Manual number (Model code)
Analog-Digital Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64AD, Q68ADV, and Q68ADI.	SH-080055 (13JR03)
(Sold separately)	
Channel Isolated High Resolution Analog-Digital Converter Module Channel Isolated High Resolution Analog-Digital Converter Module (With Signal Conditioning Function) User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the	SH-080277 (13JR51)
Q64AD-GH and Q62AD-DGH. (Sold separately)	
Channel Isolated Analog-Digital Converter Module/Channel Isolated Analog-Digital Converter Module (With Signal	
Conditioning Function) User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68AD-G and Q66AD-DG.	SH-080647ENG (13JR96)
(Sold separately)	
Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q62DAN, Q64DAN, Q68DAVN, and Q68DAIN.	SH-080054 (13JR02)
(Sold separately)	
Channel Isolated Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q62DA-FG.	SH-080281E (13JR52)
(Sold separately)	
Channel Isolated Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q66DA-G.	SH-080648ENG (13JR97)
(Sold separately)	
RTD Input Module Channel Isolated RTD Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64RD and Q64RD-G.	SH-080142 (13JR31)
(Sold separately)	
Thermocouple Input Module Channel Isolated Thermocouple/Micro Voltage Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64TD and Q64TDV-GH.	SH-080141 (13JR30)
(Sold separately) Channel Isolated Thermocouple Input Module User's Manual	
Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68TD-G-H01/Q68TD-G-H02.	SH-080795ENG (13JZ26)
(Sold separately)	
Channel Isolated RTD Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68RD3-G.	SH-080722ENG (13JZ06)
(Sold separately)	
Q61LD Load Cell Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q61LD.	SH-080821ENG (13JZ31)
(Sold separately)	
MELSEC-L Analog-Digital Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the analog-digital converter module.	SH-080899ENG (13JZ42)
(Sold separately)	
MELSEC-L Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the digital-analog converter module.	SH-080900ENG (13JZ43)
(Sold separately)	

Serial communication and modem interface instruction

Manual name	Manual number (Model code)
Q Corresponding Serial Communication Module User's Manual (Basic)	
Explains the overview for use of the module, applicable system configuration, specifications, procedures before	SH-080006
operation, fundamental data communication with external devices, maintenance, inspection, and troubleshooting.	(13JL86)
(Sold separately)	
MELSEC-L Serial Communication Module User's Manual (Basic)	
Explains the overview for use of the module, applicable system configuration, specifications, procedures before	SH-080894ENG
operation, fundamental data communication with external devices, maintenance, inspection, and troubleshooting.	(13JZ40)
(Sold separately)	
MELSEC-Q/L Serial Communication Module User's Manual (Application)	
Explains the specifications and usage of special functions of the module, settings for special functions, and data	SH-080007
communication with external devices.	(13JL87)
(Sold separately)	

CC-Link instruction

Manual name	Manual number (Model code)
Control & Communication Link System Master/Local Module User's Manual	
Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the QJ61BT11N.	SH-080394E (13JR64)
(Sold separately)	
MELSEC-L CC-Link System Master/Local Module User's Manual	
Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the built-in CC-Link and CC-Link system master/local modules.	SH-080895ENG (13JZ41)
(Sold separately)	

• CC-Link IE controller network, MELSECNET/H, and Ethernet instruction

Manual name	Manual number (Model code)
CC-Link IE Controller Network Reference Manual	
Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the	SH-080668ENG
CC-Link IE controller network.	(13JV16)
(Sold separately)	
Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)	
Explains the specifications, settings and procedures before operation, parameter setting, programming, and	SH-080049
troubleshooting of the MELSECNET/H PLC-to-PLC network system.	(13JF92)
(Sold separately)	
Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)	
Explains the system configuration, performance specifications, and programming of the MELSECNET/H network	SH-080124
system (remote I/O network).	(13JF96)
(Sold separately)	
Q Corresponding Ethernet Interface Module User's Manual (Basic)	
Explains the specifications of the Ethernet module, data communication procedure with external devices, line	SH-080009
connection (open/close), fixed buffer communication, random access buffer communication, and troubleshooting.	(13JL88)
(Sold separately)	
Q Corresponding Ethernet Interface Module User's Manual (Application)	
Explains the e-mail function of the Ethernet module, programmable controller CPU status monitoring, communication	SH-080010
function using the MELSECNET/H or MELSECNET/10 as a relay station, communication with data link instructions, and the use of file transfer (FTP server) function.	(13JL89)
(Sold separately)	

Positioning instruction

Manual name	Manual number (Model code)
Type QD75P/QD75D Positioning Module User's Manual (Details)	
Explains the system configuration, performance specifications, functions, handling, procedures before operation, and	SH-080058
troubleshooting of the QD75P1/QD75P2/QD75P4 and QD75D1/QD75D2/QD75D4.	(13JR09)
(Sold separately)	
Type QD75M Positioning Module User's Manual (Details)	
Explains the system configuration, performance specifications, functions, handling, procedures before operation, and	IB-0300062
troubleshooting of the QD75M1/QD75M2/QD75M4.	(1XB752)
(Sold separately)	
Type QD75MH Positioning Module User's Manual (Details)	
Explains the system configuration, performance specifications, functions, handling, procedures before operation, and	IB-0300117
troubleshooting of the QD75MH1/QD75MH2/QD75MH4.	(1XB917)
(Sold separately)	

• PID control instruction

Manual name	Manual number (Model code)
MELSEC-Q/L/QnA Programming Manual (PID Control Instructions) Explains the dedicated instructions for PID control.	SH-080040 (13JF59)
(Sold separately)	(155F59)

Socket communication function instruction

Manual name	Manual number (Model code)
QnUCPU User's Manual (Communication via Built-in Ethernet Port) Explains the specifications and functions of the built-in Ethernet port communication. (Sold separately)	SH-080811 (13JZ29)
MELSEC-L CPU Module User's Manual (Built-In Ethernet Function) Explains the specifications and functions of the built-in Ethernet port communication. (Sold separately)	SH-080891ENG (13JZ37)

Built-in I/O function instruction

Manual name	Manual number (Model code)
MELSEC-L CPU Module User's Manual (Built-In I/O Function)	
Explains the general input/output function, interrupt input function, pulse catch function, positioning function, and high- speed counter function of CPU module.	SH-080892ENG (13JZ38)
(Sold separately)	()

Data logging function instruction

Manual name	Manual number (Model code)
MELSEC-L CPU Module User's Manual (Data Logging Function)	
Explains the specifications of the LCPU module data logging function, and the method for using the LCPU logging	SH-080893ENG
configuration tool.	(13JZ39)
(Sold separately)	

MEMO



OVERVIEW

1.1	Purpose of This Manual	1-2
1.2	Generic Terms and Abbreviations in This Manual	1-4
1.3	Explanation Contents in This Manual	1-5
1.4	Modules and Versions Applicable to Instructions	1-7

This manual explains the instructions for the network module, intelligent function module, PID control, socket communication function, built-in I/O function, and data logging function among common instructions and special instructions necessary for creating programs using the structured programming technique.

Manuals for reference are listed in the following table according to their purpose.

For information such as the contents and number of each manual, refer to the list of 'Related manuals'.

Purpose		GX Works2 Installation Instructions	GX W Beginner	orks2 's Manual	GX Works2 Version1 Operating Manual			
		-	Simple Project	Structured Project	Common	Simple Project	Structured Project	Intelligent Function Module
Installation	Learning the operating environment and installation method	Details						
	Learning the basic operations and operating procedures		Details		Outline	Outline		
Operation of Simple project	Learning the functions and operation methods for programming				Outline	Details	Details	
	Learning all functions and operation methods except for programming				Details			
	Learning the basic operations and operating procedures			Details	Outline		Outline	
Operation of Structured project	Learning the functions and operation methods for programming				Outline	Details	Details	
	Learning all functions and operation methods except for programming				Details			
Operation of intelligent function module	Learning data setting methods for intelligent function module							Details

(1) Operation of GX Works2

*1 : ST program only

(2)	Programming	
(-)	riogrammig	

Purpose		MELSEC- Q/L/F Structured Programming Manual	MELSEC-Q/I	- Structured P Manual	rogramming	MELSEC- Q/L Programming Manual	MELSEC- Q/L/QnA Programming Manual	User's Manual for intelligent function module/ Reference Manual for network module
		Fundamentals	Common	Special	Application Functions	Common	PID Control	
	Learning the types and details of common instructions, descriptions of error codes, special relays, and special registers		Instructions	Instructions	runcuons	Details	Instructions	
Programming in Simple project	Learning the types and details of instructions for intelligent function modules							Details
	Learning the types and details of instructions for network modules							Details
	Learning the types and details of instructions for the PID control function						Details	
	Learning the fundamentals for creating a structured program for the first time	Details						
	Learning the types and details of common instructions		Details					
	Learning the types and details of instructions for intelligent function modules			Details				Details
Programming in Structured project	Learning the types and details of instructions for network modules			Details				Details
	Learning the types and details of instructions for the PID control function			Details			Details	
	Learning the descriptions of error codes, special relays, and special registers					Details		
	Learning the types and details of application functions				Details			

1-3

This manual uses the generic terms and abbreviations listed in the following table to discuss the software packages and programmable controller CPUs. Corresponding module models are also listed if needed.

Generic term and abbreviation	Description
GX Works2	Generic product name for the SWnDNC-GXW2-E (n: version)
Basic model QCPU	Generic term for the Q00J, Q00, and Q01
High Performance model QCPU	Generic term for the Q02, Q02H, Q06H, Q12H, and Q25H
Universal model QCPU	Generic term for the Q00UJ, Q00U, Q01U, Q02U, Q03UD, Q03UDE, Q04UDH, Q04UDEH, Q06UDH, Q06UDEH, Q10UDEH, Q10UDEH, Q13UDH, Q13UDEH, Q20UDH, Q20UDEH, Q26UDH, and Q26UDEH
Built-in Ethernet port QCPU	Generic term for the Q03UDE, Q04UDEH, Q06UDEH, Q10UDEH, Q13UDEH, Q20UDEH, and Q26UDEH.
QCPU (Q mode)	Generic term for the Basic model QCPU, High Performance model QCPU, and Universal model QCPU
LCPU	Generic term for the L02 and L26-BT
CPU module	Generic term for the QCPU (Q mode) and LCPU
CC-Link IE Controller Network	Abbreviation for the CC-Link IE controller network system
MELSECNET/H	Abbreviation for the MELSECNET/H network system
Ethernet	Abbreviation for the Ethernet network system
CC-Link	Abbreviation for Control & Communication Link
Personal computer	Generic term for personal computer on which Windows® operates
Common instruction	Generic term for the sequence instructions, basic instructions, application instructions, data link instructions, multiple CPU dedicated instructions, and multiple CPU high speed transmission dedicated instructions
Special instruction	Generic term for the module dedicated instructions, PID control instructions, socket communication function instructions, built-in I/O function instructions, and data logging function instructions

This manual explains the programming methods and data used for control of the following modules and PID control using structured programming technique.

Function/module for explaining an instruction	Processing performed by the instruction	Reference
Analog module	 Switches the mode. (Offset/gain setting mode or normal mode) Reads the user range setting offset/gain value. Restores the user range setting offset/gain value. 	Section 5.1
Serial communication module	Sends and receives data to and from an external device.	Section 5.2
Modem interface module	Registers and reads user frames.	Section 5.2
CC-Link system master/local module	 Reads and writes data from and to an intelligent device station on the CC-Link system. Reads and writes data from and to the auto-refresh buffer memory at the master station. Sets the network parameters. 	Section 5.3
Ethernet interface module	Sends and receives data to and from an external device.Reads and writes data from and to another station on the	
MELSECNET/H network module	CC-Link IE controller network or MELSECNET/H network system.	Section 5.4
CC-Link IE controller network module	 Reads and clears error information. Sends and receives e-mails. 	
Positioning module	 Restores the absolute position of the specified axis. Starts positioning of the specified axis. Executes teaching of the specified axis. Writes parameters/positioning data and block start data to a flash ROM. Initializes setting data. 	Section 5.5
PID control instruction	 Sets PID control data and performs PID operation for inexact differential and exact differential. Stops and starts operation of the specified loop. Changes the parameter of the specified loop. 	Capter 6
Socket communication fucntion (Built-in Ethernet port QCPU, LCPU)	 Opens/closes a connection. Reads receive data. Changes the receive mode.	Capter 7

Function/module for explaining an instruction		Processing performed by the instruction	Reference
	Positioning function	 Starts positioning of the specified axis. Starts OPR of the specified axis. Starts JOG operation of the specified axis. Restores the absolute position of the specified axis. Stops the operating axis. Changes the speed and the target position of the specified axis. 	
Built-in I/O function	Counter function	 Updates the current value of the specified CH. Sets a ring counter lower limit value and a ring counter upper limit value. Sets a preset value/latch counter value/sampling counter value. Sets the coincidence output No. n point. Measures the frequency/rotation speed. Stores the measured pulse value. Outputs the PWM wave form. 	Capter 8
Data logging function		 Generates a trigger on the data logging of the specified data logging configuration number. Resets the LOGTRG instruction of the specified data logging configuration number. 	Capter 9

⊠POINT –

Precautions on using instructions

For details of the specifications, functions, and operating timing of each instruction, refer to the related manuals of each module.

🖙 'MANUALS'

This section explains the modules and versions applicable to the instructions explained in this manual.

Function/module for explaining	g an instruction	Applicable version/serial number
	Q64AD	
	Q68ADV	
	Q68ADI	
	Q64AD-GH	
	Q62AD-DGH	
	Q68AD-G	
	Q66AD-DG	
	Q62DAN	
	Q64DAN	
	Q68DAVN	
	Q68DAIN	
	Q62DA	
	Q64DA	
Analog module	Q68DAV	Applicable to all versions
-	Q68DAI	
	Q62DA-FG	
	Q66DA-G	
	Q64RD	
	Q64RD-G	
	Q64TD	
	Q64TDV-GH	
	Q68TD-G-H01	
	Q68TD-G-H02	
	Q68RD3-G	
	Q61LD	
	L60AD4	
	L60DA4	
	QJ71C24N	
	QJ71C24N-R2	
	QJ71C24N-R4	The modules that can use the UINI instruction are
Serial communication module	QJ71C24	limited.
	QJ71C24-R2	For details F Section 5.2.14
	LJ71C24	
	LJ71C24-R2	
	QJ71CMON	
Modem interface module	QJ71CMO	Applicable to all versions
	QJ61BT11N	Applicable to all versions
		The modules that can use the RLPASET instruction are
		limited.
CC-Link system master/local module	QJ61BT11	The instruction is applicable to the module of which the
		function version is B and the first five digits of the serial
		number are '03042' or higher.
		For details F Section 5.3.7
	QJ71E71-100	
Ethernet interface module	QJ71E71-B5	Applicable to all versions
	QJ71E71-B2	
	QJ71LP21	
	QJ71LP21-25	
	QJ71LP21S-25	
	QJ71LP21G	
MELSECNET/H network module	QJ71EP21G QJ71BR11	Applicable to all versions
	QJ72LP25-25	
	QJ72LP25-25 QJ72LP25G	
	QJ72BR15	
	QJ72BR15 QJ71GP21-SX	
CC-Link IE controller network module	QJ71GP21-SX QJ71GP21S-SX	Applicable to all versions
	WIT 10F 210-0A	

For details of applicable versions, refer to each instruction in Chapter 5.

Function/module for explaining		Applicable version/serial number
	QD75P1	
	QD75P2	
	QD75P4	
	QD75D1	
	QD75D2	
	QD75D4	
Positioning module	QD75M1	Applicable to all versions
	QD75M2	
	QD75M4	
	QD75MH1	
	QD75MH2	
	QD75MH4	
	Q00J	
	Q00UJ	
	Q0003	
	Q00U	
	Q01	
	Q01U	
	Q02	
	Q02H	
	Q02U	
	Q03UD	
	Q03UDE	
	Q04UDH	
	Q04UDEH	
CPU module supporting the PID control	Q06H	The modules that can use the instruction are limited.
nstruction	Q06UDH	For details F Section 6.1, Section 6.2
	Q06UDEH	
	Q10UDH	
	Q10UDEH	
	Q12H	
	Q13UDH	
	Q13UDEH	
	Q20UDH	
	Q20UDEH	
	Q25H	
	Q26UDH	
	Q26UDEH	
	L02	
	L26-BT	
	Q03UDE	
	Q04UDEH	The modules that can use the socket communication
	Q06UDEH	function instruction are limited when using the Built-in
	Q10UDEH	Ethernet port QCPU.
	I	The instruction is applicable to the module of which the
	Q13UDEH	
	Q13UDEH Q20UDEH	
Built-in Ethernet port QCPU/LCPU Built-in Ethernet function)	Q20UDEH	function version is B and the first five digits of the serial
	Q20UDEH Q26UDEH	function version is B and the first five digits of the serial number are '11012' or higher.
	Q20UDEH Q26UDEH L02	function version is B and the first five digits of the serial
	Q20UDEH Q26UDEH L02 L26-BT	function version is B and the first five digits of the serial number are '11012' or higher.
	Q20UDEH Q26UDEH L02 L26-BT L02	function version is B and the first five digits of the serial number are '11012' or higher.
Built-in Ethernet function)	Q20UDEH Q26UDEH L02 L26-BT L02 L26-BT	function version is B and the first five digits of the serial number are '11012' or higher. Applicable to all versions for LCPU.
Built-in Ethernet function)	Q20UDEH Q26UDEH L02 L26-BT L02	function version is B and the first five digits of the serial number are '11012' or higher. Applicable to all versions for LCPU.

1

 How to check the applicable versio 	n or serial number
Intelligent function modules	: User's Manual or Reference Manual for
	the module listed in 'Manuals'
CPU modules supporting PID contr	rol: User's Manual (Function Explanation,
	Program Fundamentals) of the CPU
	module to be used
Built-in Ethernet port QCPU	: QnUCPU User's Manual
	(Communication via Built-in Ethernet
	Port)
 Manual for reference 	
🖅 'MANUALS'	

MEMO



INSTRUCTION TABLES

2.1	How to Read Instruction Tables 2-	-2
2.2	Module Dedicated Instruction	-3
2.3	PID Control Instruction	-9
2.4	Socket Communication Function Instruction	0
2.5	Built-in I/O Function Instruction	11
2.6	Data Logging Function Instruction 2-1	4

1

2.1 How to Read Instruction Tables

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Mode switching	G_OFFGAN	(Un), (s)	Moves to the offset/gain setting mode.		- 5-2
mode switching	GP_OFFGAN	Un), (s)	Moves to the normal mode.		
Setting value	G_OGLOAD	(Ln), (s), (d)	Reads the user range settings offset/gain value		5-4
reading	GP_OGLOAD	Un), (s), (d)	to the programmable controller CPU.		0 4
Setting value	G_OGSTOR	(Ln), (s), (d)	Restores the user range settings offset/gain value stored in the programmable controller		5-31
restoration	GP_OGSTOR	(Un), (s), (d)	CPU.		0-01
↑ ①	 2	 3	 (4)	↑ (5)	

Instruction tables in Section 2.2 have the following form:

Description

- ① Classifies instructions by application.
- ② Indicates the instructions used in a program.
- ③ Indicates the arguments of the instruction.
 - (s), (s): Source...... Stores data before operation.
 - (d), (d): Destination Indicates the destination of data after operation.

 - (in): Specifies the network number.
- ④ Indicates the processing details of each instruction.

(5) Details of executing condition of each instruction are as follows:

Symbol	Executing condition
	Indicates an 'executed while ON' type instruction that is executed only while the precondition is ON. When the precondition is OFF, the instruction is not executed and does not perform processing.
	Indicates an 'executed once at ON' type instruction that is executed only at the rising pulse (OFF \rightarrow ON) of the precondition of the instruction. The instruction is not executed afterwards even when the condition is ON and thus does not perform processing.

(6) Indicates the pages on which the instructions are explained.

2.2.1 Analog instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Mode switching	G_OFFGAN	Un), s	Moves to the offset/gain setting mode.		5-2
Mode switching	GP_OFFGAN	Un, s	Moves to the normal mode.		
Setting value reading	G_OGLOAD	(Ln), (s), (d)	Reads the user range settings offset/gain value		5-4
	GP_OGLOAD	Un), (s), (d)	to the programmable controller CPU.		
Setting value restoration	G_OGSTOR	(m), (s), (d)	Restores the user range settings offset/gain value stored in the programmable controller		5-31
	GP_OGSTOR	Un), (s), (d)	CPU.		5-31

$2.2.2\ \mbox{Serial communication}$ and modem interface instruction

			Processing details	Executing condition	Applicable module		
Classification	Instruction name	Argument			Serial communica tion	Modem interface	Page
On-demand	G_ONDEMAND	Un), 61, 62, d	Sends data using the on-demand		0	0	E 00
function transmission	GP_ONDEMAND	Un), (s), (s2, d	function of MC protocol.		0	0	5-60
Nonprocedural	G_OUTPUT	Un), s1, s2, d			0	0	5.04
protocol	GP_OUTPUT	Un), (s1), (s2), (d)	Sends the specified number of data.		0	0	5-64
communication	G_INPUT	Un), (5), (1), (2)	Reads the received data.		0	0	5-67
	G_BIDOUT	un), s1, s2, d	Condo the appecified number of data		0	0	5 70
Bidirectional	GP_BIDOUT	Un), 61, 62, d	Sends the specified number of data.		0	0	5-70
protocol communication	G_BIDIN	Un), (s), (d), (d)	Deada the reserved data		0	0	F 70
	GP_BIDIN	Un), (5), (1), (2)	Reads the received data.		0	0	5-73
Communication	G_SPBUSY	Un), (d)	Reads the data transmission/		0	0	- 7-
status check	GP_SPBUSY	Un), d	reception status using the instruction.		0	0	5-75
Receive data clear	ZP_CSET	☞, ଶ, ହ, ๗, ๗	Clears receive data without stopping transmission using the nonprocedural protocol.		0	0	5-76
Data	Z_BUFRCVS	(Un), (S), (d)	Receives data with an interrupt program using the nonprocedural protocol or bidirectional protocol.		0	0	5-79
transmission/ reception	G_PRR	Un), (\$), (d)	Sends data by user frame according to the specification in user frame		0	0	
	GP_PRR	(m), (s), (d)	specification area for transmission using the nonprocedural protocol.		0	0	5-81
Unit setting of the number of send/receive data	ZP_CSET	☞, ᢒ, 2, 0, 0	Sets the unit (word/byte) of the number of the data to be sent or received.		0	0	5-85
Programmable controller CPU monitoring function	ZP_CSET	☞, ᢒ, 2, 0, 0	Registers and cancels the programmable controller CPU monitoring for using the programmable controller CPU monitoring function.		0	0	5-89
	G_PUTE	Un ³ , 61, 62, d			0	0	F 07
Flash ROM user frame	GP_PUTE	Un), 61, 62, d	Registers a user frames.		0	0	5-97
registration/ reading	G_GETE	Un), s1, s2, d			0	0	E 400
	GP_GETE	Un), (s1), (s2), (d)	Reads a user frames.		0	0	- 5-100
Mode switching	Z_UINI	(m), (s), (d)	Switches the mode, transmission specification, and host station number.		0	_	5-103

2.2.3 CC-Link instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Reading from the buffer memory of	G_RIRD	un, s, d), @	Reads data from the buffer memory of the		5-108
an intelligent device station	GP_RIRD	₪, (6), @), @	specified station.		5-106
Writing to the buffer memory of	G_RIWT	Un), \$1, \$2, d	Writes data to the buffer memory of the specified		5 440
an intelligent device station	GP_RIWT	Un, 61, 62, d	station or the programmable controller CPU device of the specified station.		5-113
Reading from the buffer memory of an intelligent	G_RIRCV	(F), (1), (2), (1), (2)	Automatically performs handshaking with the specified station and reads data from the buffer memory of the specified station.		5-118
device station (with handshake)	GP_RIRCV	☞, ᢒ, 2, 0, 0, 2	This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2.		
Writing to the buffer memory of an intelligent	G_RISEND	(F), I), I, I, Ø, Ø, Ø	Automatically performs handshaking with the specified station and writes data to the buffer memory of the specified station.		5-122
device station (with handshake)	GP_RISEND	☞, ᢒ, 2, 0, 0, 2	This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2.		
Reading from the auto-refresh buffer	G_RIFR	und, 10, 10, 13, 0	Reads data from the auto-refresh buffer memory of the specified station.		5-126
memory of the master station	GP_RIFR	un, 11, 12, 13, d	This instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2.		5-120
Writing to the auto-refresh buffer	G_RITO	und, 10, 12, 13, 10	Writes data to the auto-refresh buffer memory of the specified station.		5-128
memory of the master station	GP_RITO	☞, ๗, ๗, ७, ७, ๗	This instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2.		5-120
Network parameter	G_RLPASET	ur), 1), 2, 3, 4, 5, d	Sets network parameter to the master station and		5-130
setting	GP_RLPASET	(m), \$1, \$2, \$3, \$4, \$5, (d)	starts up the data link.		5-130

VSTRUCTION ABLES

2.2.4 CC-Link IE controller network, MELSECNET/H, and Ethernet instruction

					Appl	icable m	Applicable module		
Classific ation	Instruction name	Argument	Processing details	Executing condition	CC-Link IE controller network	MELSEC NET/H	Ethernet	Page	
	J_READ	(m ⁾ , (s ¹), (s ²), (d ¹), (d ²)			0	0	0		
	JP_READ	(m [°]), (s ¹), (s ²), (d ¹), (d ²)	Reads data from a word device		0	0	0	5-137	
	G_READ	(m ²), (s1), (s2), (d1), (d2)	of another station.		0	0	0	5-137	
	GP_READ	(m ²), (s1), (s2), (d1), (d2)			0	0	0		
	J_SREAD	(m [*]), (s ¹), (s ²), (d ¹), (d ²), (d ³)			0	0	0		
	JP_SREAD	.m [*] , s ¹ , s ² , d ¹ , d ² , d ³	Reads data from a device of		0	0	0	F 440	
	G_SREAD	0, 1, 2, 0, 0, 0, 3	another station (with completion device).		0	0	0	5-142	
Device	GP_SREAD	0, 1, 2, 0, 0, 2, 3			0	0	0		
data read/ write	J_WRITE	.m [*] , s ¹ , s ² , d ¹ , a ²			0	0	0		
	JP_WRITE	, s), @, d), @	Writes data to a device of another station.		0	0	0		
	G_WRITE	☞, ⑸, ㉒, 邻, ㉒			0	0	0	5-146	
	GP_WRITE	☞, ᢒ, ֎, ๗, ֎			0	0	0		
	J_SWRITE	(m ⁾ , (s), (2), (d), (2), (d)			0	0	0		
	JP_SWRITE	m, s), s2, d), d2, d3	Writes data to a device of another station (with completion device).		0	0	0	5-153	
	G_SWRITE	₲, \$, \$, \$, \$, \$, \$, \$,			0	0	0		
	GP_SWRITE	☞, ᢒ, 2, 0, 0, 0, 3			0	0	0		
	J_SEND	(m), (s), (s2, (d)			0	0	0		
	JP_SEND	(m), (s), (s2, (d)			0	0	0		
	G_SEND	un, s), s2, d	Sends data to another station.		0	0	0	5-157	
	GP_SEND	Un, s), s2, d			0	0	0		
Message (user-specified	J_RECV	(m [°]), (s), (d), (d)			0	0	0		
data) communication	JP_RECV		Reads received data from		0	0	0	E 404	
	G_RECV	un, s, @, @	another station (for main program).		0	0	0	5-164	
	GP_RECV	un, s, @, @			0	0	0		
	Z_RECVS	(m), (s), (d), (d)	Reads received data from another station (for interrupt program).		0	0	0	5-169	

						icable m	odule	
Classific ation	Instruction name	Argument	Processing details	Executing condition	CC-Link IE controller network	MELSEC NET/H	Ethernet	Page
Transient . request	J_REQ	Jn), §1, §2, @1, @			0	0	0	
	JP_REQ	Jn), \$1, \$2, \$1, \$2	Executes remote RUN/STOP for another station.		0	0	0	5-172
to another	G_REQ	(m ²), (s1), (s2), (d1), (d2)	Reads/writes clock data from another station.		0	0	0	5-17Z
station	GP_REQ	☞, ਗ਼, Ձ, 예, @			0	0	0	
	Z_RRUN_J	.m., n), n2, n3, n4, d			0	0	-	
Remote	ZP_RRUN_J	(m ⁾ , ⁽¹⁾ , ⁽	Executes remote RUN for a CPU		0	0	-	5 404
RUN	Z_RRUN_U	☞, ਗ਼, ֎, ֎, ֎, ֎	module on another station.		0	0	-	5-181
	ZP_RRUN_U	☞, 예, ֎, ֎, ֎, ֎			0	0	-	
	Z_RSTOP_J	☞, ᡣ, ֎, ֎, ֎, ֎			0	0	_	
Remote	ZP_RSTOP_J	₲, ๗, ๗, ๗, ๗, ๗	Executes remote STOP for a		0	0	-	
STOP	Z_RSTOP_U	☞, ๓, ๗, ๗, ๗, ๗	CPU module on another station.		0	0	-	5-183
	ZP_RSTOP_U	☞, ๓, ֎, ୠ, ֎, ๔	-		0	0	-	
Dooding	Z_RTMRD_J	Jn), 11, 12, 13, 11, 12	Reads clock data from a CPU module on another station.		0	0	-	5-185
Reading clock data	ZP_RTMRD_J	Jn), 11, 12, 13, 11, 12			0	0	_	
from another	Z_RTMRD_U	☞, ๗, ֎, ֎, ๗, ֎			0	0	-	
station	ZP_RTMRD_U	(11), 11), 12, 13, 11, 12			0	0	_	
	Z_RTMWR_J	Jn), 11), 12), 13, 11), 12			_	0	-	
Writing clock data	ZP_RTMWR_J	☞, ๗, ֎, ୠ, ๗, ֎	Writes clock data to a CPU		-	0	-	5-187
to another	Z_RTMWR_U	(11), 11), 12, 13, 11), 12	module on another station.		_	0	_	
station	ZP_RTMWR_U	(11), 11), 112, 113, 111, 112			_	0	_	
Reading from buffer memory	Z_REMFR	(m), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (10), (Reads data from the buffer		_	0	_	
of intelligent function module on remote I/O station	ZP_REMFR	(m), 10, 12, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	memory of an intelligent function module on the remote I/O station.		_	0	_	5-190
Writing from buffer memory	Z_REMTO	(17), 10, 10, 10, 10, 10, 10, 10, 10	Writes data to the huffer memory		-	0	-	
of intelligent function module on remote I/O station	ZP_REMTO	(m), (1), (2), (3), (4), (5), (4), (2)	Writes data to the buffer memory - of an intelligent function module on the remote I/O station.		-	0	-	5-192

					Appl	icable m	odule	
Classific ation	Instruction name	Argument	Processing details	Executing condition	CC-Link IE controller network	MELSEC NET/H	Ethernet	Page
Connection opening or	ZP_OPEN	Un, \$1, \$2, d	Opens a connection.		-	-	0	5-195
closing	ZP_CLOSE	un, s1, s2, d	Closes a connection.		-	-	0	5-199
Fixed	ZP_BUFRCV	☞, ᢒ, 2, 0, 0	Reads received data. (for main program)		_	_	0	5-202
buffer communic	Z_BUFRCVS	Un, s, d	Reads received data. (for interrupt program)		-	_	0	5-206
ation	ZP_BUFSND	Un, \$1, \$2, \$3, d	Sends data.		-	-	0	5-208
Reading or clearing	ZP_ERRCLR	(m), (s), (d)	Clears error information.		I	-	0	5-212
error information	ZP_ERRRD	Un, s, d	Reads error information.		-	-	0	5-215
Re-initialization	UINI	(Un), (s), (d)	Executes re-initialization.		0	-	0	5-218
E-mail communic	ZP_MRECV	(m), (s), (1), (2)	Reads received e-mail.		-	-	0	5-221
ation	ZP_MSEND	Un, \$1, \$2, d	Sends an e-mail.		_	_	0	5-226

2.2.5 Positioning instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	Z_ABRST1	Un, s, d			
Absolute position	Z_ABRST2	Un, s, d	Restores the absolute position of the specified axis.		5-233
restoration	Z_ABRST3	(Un), (S), (d)			0 200
	Z_ABRST4	(Un), (S), (d)			
	ZP_PSTRT1	(Un), (s), (d)			
Positioning start	ZP_PSTRT2	(Un), (s), (d)	Starts positioning of the specified axis.		5-237
r ositioning start	ZP_PSTRT3	(un), (s), (d)			5-257
	ZP_PSTRT4	(m), (s), (d)			
	ZP_TEACH1	(Un), (s), (d)			
Teaching	ZP_TEACH2	(Un), (s), (d)	Performs teaching for the specified axis.		5-239
readining	ZP_TEACH3	(Un), (s), (d)			5-200
	ZP_TEACH4	(Ln [°]), (s), (d)			
Writing to flash ROM	ZP_PFWRT	(m), (s), (d)	Writes the QD75 parameters, positioning data, and block start data to the flash ROM.		5-242
Setting data initialization	Z_PINIT	(m), (s), (d)	Initializes the QD75 setting data.		5-244

2.3.1 PID control instruction (inexact differential)

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Data setting	S_PIDINIT	(\$)	Sets data to be used for PID operation.		6-2
	SP_PIDINIT	(S)			0-2
PID operation	S_PIDCONT	s	Performs PID operation based on the set value (SV)		6-7
	SP_PIDCONT	(S)	and process value (PV).		0-7
PID operation stop	S_PIDSTOP	0	Stops the PID operation for the specified loop		
	SP_PIDSTOP	n	number.		6-11
PID operation start	S_PIDRUN	n	Starts the PID operation for the specified loop		0 11
	SP_PIDRUN	n	number.		
Operation	S_PIDPRMW	(n), (s)	Changes operation parameter of the specified loop number.		6-12
parameter change	SP_PIDPRMW	(n), (S)			0-12

2.3.2 PID control instruction (exact differential)

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Data setting	PIDINIT	s	Sets data to be used for PID operation.		6-16
Data cotarig	PIDINITP	s			0-10
PID operation	PIDCONT	s	Performs PID operation based on the set value (SV)		6-21
PID operation	PIDCONTP	s	and process value (PV).		0-21
PID operation stop	PIDSTOP	n	Stops the PID operation for the specified loop		
	PIDSTOPP	n	number.		6-26
PID operation start	PIDRUN	n	Starts the PID operation for the specified loop		0 20
T ID operation start	PIDRUNP	n	number.		
Operation	PIDPRMW	(n), (s)	Changes operation parameter of the specified loop		6-27
parameter change	PIDPRMWP	(n), (S)	number.		0-27

2.4 Socket Communication Function Instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Opening/closing	SP_SOCOPEN	Un), §1, §2, d	Establishes a connection.		7-2
connection	SP_SOCCLOSE	Un), §1, §2, d	Shuts a connection off.		7-5
Reading receive	SP_SOCRCV	☞, \$1, \$2, @, @	Reads receive data. (Reading at the end process)		7-8
data	S_SOCRCVS	(m), (s), (d)	Reads receive data. (Reading at the instruction execution)		7-11
Sending data	SP_SOCSND	(Ln [°]), (s), (s), (s), (d)	Sends data.		7-13
Reading connection information	SP_SOCCINF	un, 1, 2, 0	Reads connection information.		7-16
Changing destination	SP_SOCCSET	un), (1), (2)	Changes a destination of a UDP/IP connection.		7-19
Changing receive mode	SP_SOCRMODE	Un), (s1), (s2)	Changes the receive mode of a connection.		7-22
Reading data from	S_SOCRDATA		Reads data from the receive data area.		7-24
receive data area	SP_SOCRDATA	ur), (1), (2), (d)			1-24

2.5.1 Positioning function dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	IPPSTRT1	n			
	IPPSTRT1P	n	Specifies a data number to be executed from "Positioning Data" No. 1 to No. 10 which are		8-2
	IPPSTRT2	n	previously set in GX Works2, and starts the positioning.		0-2
IPPSTRT1 IPPSTRT1 IPPSTRT1 IPPSTRT1P Specifies a data number to be executed from "Positioning Data" No. 1 to No. 10 which are previously set in GX Works2, and starts the positioning. Positioning start IPPSTRT2 IPPSTRT2 IPPSTRT2 IPPSTRT2P IPPSTRT1 IPPSTRT2P IPPSTRT1 IPPSTRT2 IPPSTRT2<					
Desitioning start	IPDSTRT1	(S)	Disregarding "Positioning Data" No. 1 to No. 10		
Positioning start	IPDSTRT1P	(S)	which are previously set in GX Works2, starts		8-3
	IPDSTRT2	\$	devices starting from the one specified for		0-5
	IPDSTRT2P	Instruction name Argument Processing decails condition PPSTRT1 © Specifies a data number to be executed from			
	IPSIMUL	ൻ, ര			8-6
	IPSIMULP	ൻ, ര2			0-0
	IPOPR1	s			
OPP start	IPOPR1P	s	Specifies a method and starts the OPR of the		8-7
OFR Start	IPOPR2	s	specified axis.		
	IPOPR2P	s			
IOG start	IPJOG1	s1, s2	Starts the IOG operation of the specified axis		8-9
	IPJOG2	SI, S2			00
Absolute position	IPABRST1	(s), (d)	Executes the absolute position restoration of the		8-11
restoration	IPABRST2	s, d	specified axis.		0-11
Stop	IPJOG1	-	Stops the axis in operation		8-13
otop	IPJOG2	-			0-10
	IPSPCHG1	s			
Speed change	IPSPCHG1P	s	Changes the speed of the specified axis		8-14
Speed change	IPSPCHG2	s			0-14
	IPSPCHG2P	s			
	IPTPCHG1	s			
Target position	IPTPCHG1P	s	Changes the target position of the specified		8-16
change	IPTPCHG2	s	axis.		8-16
	IPTPCHG2P	(\$)			

2

2.5.2 Counter function dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	ICCNTRD1	-			
Current value read	ICCNTRD1P	-	Stores the most recent value for the current		8-18
Current value reau	ICCNTRD2	-	value of the specified CH.		0-10
	ICCNTRD2P	-			
	ICRNGWR1	\$1, \$2		APER CH.	
Ring counter	ICRNGWR1P	\$1, \$2	Sets a ring counter lower limit value and upper		8-19
value write	ICRNGWR2	\$1, \$2	limit value of the specified CH.		0-19
	ICNTRD1PIIICNTRD1PStores the most recent value for the current value of the specified CH.IICNTRD2PICNTRD2Pag counter berlower limit $@, @$ ICNGWR1P $@, @$ berlower limit $@, @$ ICNGWR2 $@, @$ berlower limit. $@, @$				
	ICPREWR1	(S)			
Dreast value write	ICPREWR1P	6			8-21
Preset value write	ICPREWR2	6	- Sets a preset value of the specified CH.		0-21
	ICOREWR2P	(S)	_		
	ICLTHRD1	n, s			
Latch counter	ICLTHRD1P	n, s			8-22
value read	ICLTHRD2	n, s			0-22
	ICLTHRD2P	n, s			
	ICSMPRD1	d			- 8-23
Sampling counter	ICSMPRD1P	d	Stores a sampling counter value of the specified		
value read	ICSMPRD2	đ	CH.		
	ICSMPRD2P	đ			
	ICCOVWR1	n, s			
Coincidence	ICCOVWR1P	n, s	Sets a coincidence output No. n point of the		8-24
output point write	ICCOVWR2	n, s	specified CH.		0-24
	ICCOVWR2P	n, s			
Frequency	ICFCNT1	d	Moonurse the frequency of the specified CU		9.05
measurement	ICFCNT2	d			8-25
Rotation speed ICRCNT1 (d) Measures the rotation speed of the specified		8-26			
measurement	ICRCNT2	đ	CH.		0-20

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	ICPLSRD1	d			
Pulse	ICPLSRD1P	d	Stores the measured pulse value of the		8-27
measurement read	ICPLSRD2	d	specified CH.		0-21
	ICPLSRD2P	d	 		
PWM output	ICPWM1	61,62	Outputs the PWM waveform of the specified CH.		8-28
	ICPWM2	61, 62			0-20

INSTRUCTION TABLES

2.6 Data Logging Function Instruction

Classification Instruction name		Argument	Processing details	Executing condition	Page
Trigger logging set/reset	LOGTRG	n	Generates the trigger conditions in a trigger logging. Stores the data sampling results to the data logging file for the number of times specified in the trigger logging configuration of the programming tool.		9-2
	LOGTRGR	n	Resets the trigger conditions		



CONFIGURATION OF INSTRUCTIONS

3.1	Configuration	of Instructions	3-2
	0		

1

Instructions available in the CPU module can be divided into an instruction name and an argument.

The application of an instruction name and an argument are as follows:

- Instruction name..... Indicates the function of the instruction.
- Argument Indicates the I/O data used in the instruction.

Arguments are classified into I/O number, source data, destination data, number of devices, executing condition, and execution status.

- (1) I/O number
 - (a) I/O number is data that set a module in which the instruction is to be executed. Set the I/O number by start I/O number or a network number of the module depending on the instruction.
 - (b) Setting the start I/O number (Un) of the module
 Set the higher two digits when expressing the start I/O number in three digits for the module in which the instruction is to be executed.
 Set the start I/O number in a numeric value or character string according to the data type available with the instruction.
 - Setting the start I/O number in word (unsigned)/16-bit string or word (signed) data type

Set the start I/O number of the module for 'n' of 'Un'. Example: For the module whose start I/O number is 020H: 02

 Setting the start I/O number in string data type Set the start I/O number in the format of "Un" (n: start I/O number of the module).
 Example: For the module whose start I/O number is 020H: "02"

(c) Network number (Jn) setting

Set the network number of the network module/Ethernet module in which the instruction is to be executed.

Set a network number indicated below, in word (unsigned)/16-bit string or word (signed) data type, for 'n' of 'Jn'.

- 1 to 239 : Network number
- 254 : Network specified in "Valid module during other station access" on the GX Works2 network parameter screen

Example: When the network number is 1:1

(2) Source (s)

•

- (a) A source is data used in an operation.
- (b) The following source types are available depending on the device specified in an instruction:

Constant	Specifies a numeric value used in an operation. Constants are set during programming so that they cannot be changed while the program is being executed. Perform index setting when using them as variable data.
Bit device and word device	Specifies the device in which the data used in the operation are stored. Data must be stored to the specified device before executing the operation. By changing the data to be stored to the specified device while a program is being executed, the data used in the instruction can be changed.

- (c) The instructions explained in this manual use special data. Refer to the explanation for each instruction and use data correctly.
- (3) Destination d
 - (a) Data after the operation are stored to a destination.
 - (b) Set a device in which data are to be stored to a destination.
 - (c) The instructions explained in this manual use special data. Refer to the explanation for each instruction and use data correctly.

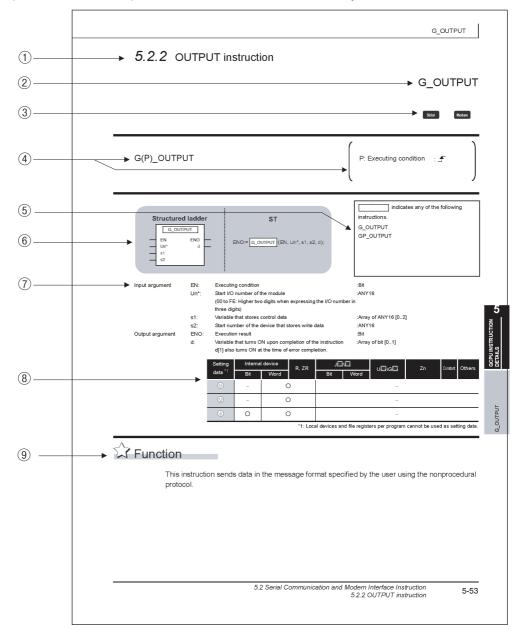
For details of the configuration of instructions for labels and structures, refer to the MELSEC-Q/L/F Structured Programming Manual (Fundamentals).

MEMO



HOW TO READ INSTRUCTIONS

1



Chapter 5 provides detailed explanation on each instruction in the layout as shown below.

- ① Indicates a section number and an outline of an instruction.
- 2 Indicates an instruction to be explained.
- ③ Indicates the instruction execution target module.

If one instruction is to be executed in two or more modules, applicable modules are indicated using icons.

④ Indicates the instruction name and executing condition of the instruction.

Executing condition	Non-conditional execution	Executed while ON	Executed once at ON	Executed while OFF	Executed once at OFF
Symbols on the corresponding page	No symbol				

(5) Indicates the instruction names that can be described.

6 Indicates the description format of the instruction in the structured ladder and ST languages.

- ⑦ Indicates the names of input and output arguments, and the data type of each argument. For details of each data type, refer to the MELSEC-Q/L/F structured programming manual (Fundamentals).
- 8 Devices that can be used in the instruction are marked with \bigcirc .

Device classification	Internal device (system, user)		register J		Link direct device ^{*4}		Index register	Constant ^{*5}	Others ^{*5}
classification	Bit	Word	R, ZR	Bit	Word	module U[]]\G[]]	Zn		
Usable device ^{*1}	X, Y, M, L, SM, F, B, SB, FX, FY ^{*2}	T, ST, C, ^{*3} D, W, SD, SW, FD, @⊡	R, ZR	J⊡/SB]⊡/X]⊡/X	J⊞/SM]	U []\G []	Z	K, H, E, \$,	P, I, J, U, DX, DY, N, BL, TR, BL\S, V

The following table shows applicable classification for usable devices.

*1 : For description of each device, refer to the User's Manual (Function Explanation, Program Fundamentals) of the CPU module to be used.

*2 : FX and FY can be used in bit data only, and FD can be used in word data only in the PID control instruction. *3 : T, ST, and C can be used in word data only (cannot be used in bit data).

*4 : These devices can be used in CC-Link IE controller network, MELSECNET/H, and MELSECNET/10.

*5 : The Constant and Others columns describe settable devices.

(9) Indicates the processing performed by the instruction.

Device	Control Data	Setting data	Setting range	Setting side
(0)	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side)	1, 2	User
		2: Channel 2 (CH2 side) The instruction completion status is stored.		
③[1]	Transmission result	0 : Normal completion Other than 0 : Error completion (error code)	-	System
(8)[2]	Number of send data	Set the number of send data.	1 or more	User
			/	*
5-52	6 2 Parti (Parti - 1	stion and Modem Interface Instruction		

10 Indicates data such as control data, send data or receive data, that are used for an input argument or output argument in an instruction.

Example: Control data to be used in the CC-Link instruction 'GP_RIRD'

(1) The setting side indicates the following:

User : Data set by user before dedicated instruction execution

System : Data stored by the programmable controller CPU after dedicated instruction execution

The setting does not need to be set by the user.

If the setting is set by the user, data cannot be read normally.



MODULE DEDICATED INSTRUCTION

5.1	Analog Instruction
5.2	Serial Communication and Modem Interface Instruction
5.3	CC-Link Instruction
5.4	CC-Link IE Controller Network, MELSECNET/H, and Ethernet Instruction 5-137

1

2 OVERVIEW

5.1 Analog Instruction

5.1.1 OFFGAN instruction

G_OFFGAN

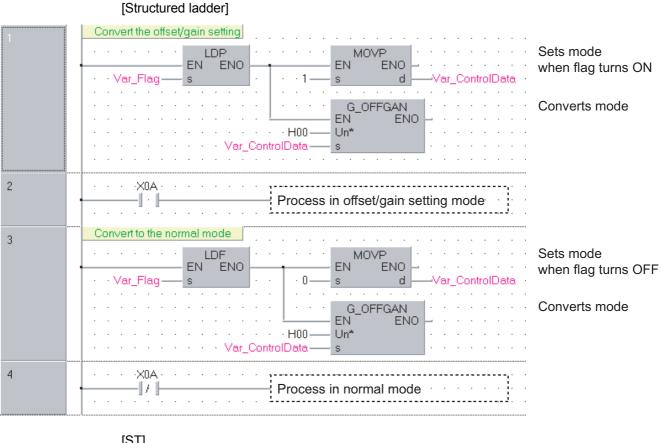
G(P)_OFFG	AN			P: Executing condition :
Structure EN Un* s		ST ENO:= <u>G_OFFGAN</u> (EN, Un*, s);		indicates any of the following instructions. G_OFFGAN GP_OFFGAN
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O three digits)	O number i	:Bit :ANY16 n
	s:	Mode switching 0: To normal mode 1: To offset/gain setting mode		:ANY16
Output argument	ENO:	Execution result		:Bit
	Setting data *1 s	Internal device R, ZR J∷:\`:: Bit Word Bit W - ○ O O	/ord	J∭∖G∭ Zn Constant Others
		*1: Local devi	ces and file	e registers per program cannot be used as setting data.



This instruction converts the mode of analog modules. (normal mode to offset/gain setting mode, offset/gain setting mode to normal mode)

Program Example

The following program converts the mode of the A/D converter module mounted on the I/O numbers from X/Y0 to X/YF to the offset/gain setting mode when the flag turns ON, and gets it back to the normal mode when the flag turns OFF.



[ST]	
(* Convert to the offset/gain setting mode *)	
IF(LDP(TRUE,Var_Flag))THEN	(* Flag ON *)
MOVP(TRUE,1,Var_ControlData);	(* Sets mode *)
G_OFFGAN(TRUE,H00,Var_ControlData);	(* Converts mode *)
END_IF;	
IF(X0A=TRUE)THEN	
(* Dracace in offect/acin acting mode *)	
(* Process in offset/gain setting mode *)	
END_IF;	
(* Convert to the normal mode *)	
IF(LDF(TRUE,Var_Flag))THEN	(* Flag OFF *)
MOVP(TRUE,0,Var_ControlData);	(* Sets mode *)
G_OFFGAN(TRUE,H00,Var_ControlData);	(* Converts mode *)
IF(X0A=FALSE)THEN	
(* Process in normal mode *)	
END_IF;	

G_OFFGAN

5.1.2 OGLOAD instruction

G_OGLOAD

G(P)_OGLC	AD		P: Executing condition :
Structure EN Un* s		ST ENO:= <u>G_OGLOAD</u> (EN, Un*, s, d);	indicates any of the following instructions. G_OGLOAD GP_OGLOAD
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number three digits)	:Bit :ANY16 in
	s:	Variable that stores control data	:Array of ANY16 [099]
Output argument	ENO:	Execution result	:Bit
	d:	Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:Array of bit [01]
		Setting Internal device R, ZR Jiiii\\iii data *1 Bit Word Bit	UIII\GIII Zn Constant Others
	Ī	s – O	-
		d 0	-
	-	*1: Local devices and f	île registers per program cannot be used as setting da

Function

This instruction reads the user range settings offset/gain values of analog modules to the CPU.

Control Data

(1) Q64AD/L60AD4

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
<u></u> জ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s [2]	Pass data classification setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH.4CH.3CH.2CH.1	0000н to 0000Fн	User
⑤ [3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
\$[5]	CH1 Industrial shipment settings gain value	_	-	System
\$[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH3 Industrial shipment settings offset value	-	-	System
⑤ [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
ঙ [11]	CH4 Industrial shipment settings gain value	_	-	System
ঙ [12]	CH1 User range settings offset value	_	-	System
ঙ [13]	CH1 User range settings gain value	_	-	System
ঙ [14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	_	-	System
s [17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	-	System
S [19]	CH4 User range settings gain value	-	-	System

G_OGLOAD

(2) Q68ADV

Device	Item	Setting data	Setting range	Setting side
S [0]	System area	_	-	-
		The instruction completion status is stored.		
ঙ[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
ାର				
<u></u>	System area	-	-	-
⑤[J] ⑤[4]	CH1 Industrial shipment settings offset value		_	System
<u>৩</u> [+] (\$[5]	CH1 Industrial shipment settings gain value	_	_	System
	CH2 Industrial shipment settings offset value		_	System
⑤ [6]	CH2 Industrial shipment settings gain value		_	System
<u> </u>	CH3 Industrial shipment settings offset value		_	System
§ [8]	CH3 Industrial shipment settings gain value		_	System
© [9]	CH4 Industrial shipment settings offset value		-	
© [10]				System
<u></u> §[11]	CH4 Industrial shipment settings gain value	_	-	System
<u></u> §[12]	CH5 Industrial shipment settings offset value	-	-	System
<u></u> । । । । । । । । । । । । ।	CH5 Industrial shipment settings gain value	-	-	System
<u></u> জ[14]	CH6 Industrial shipment settings offset value	_	-	System
<u>জ</u> [15]	CH6 Industrial shipment settings gain value	-	-	System
<u>\$</u> [16]	CH7 Industrial shipment settings offset value	-	-	System
ঙ [17]	CH7 Industrial shipment settings gain value	-	-	System
s [18]	CH8 Industrial shipment settings offset value	-	-	System
<u></u> জ[19]	CH8 Industrial shipment settings gain value	_	-	System
s [20]	CH1 User range settings offset value	-	-	System
ি [21]	CH1 User range settings gain value	-	-	System
s [22]	CH2 User range settings offset value	-	-	System
s [23]	CH2 User range settings gain value	-	-	System
s [24]	CH3 User range settings offset value	-	-	System
s [25]	CH3 User range settings gain value	-	-	System
\$ [26]	CH4 User range settings offset value	-	_	System
ঙ [27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	-	-	System
s [30]	CH6 User range settings offset value	_	-	System
\$[31]	CH6 User range settings gain value	_	-	System
\$ [32]	CH7 User range settings offset value	_	-	System
\$[33]	CH7 User range settings gain value	_	-	System
\$[34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	_	_	System

(3) Q68ADI

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
		The instruction completion status is stored.		
<u></u> জ[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
⑤ [2]				
⑤[2] ⑤[3]	System area	-	-	-
⑤[4]	CH1 Industrial shipment settings offset value	_		System
⑤[5]	CH1 Industrial shipment settings gain value	_	_	System
⑤[6]	CH2 Industrial shipment settings offset value	_	_	System
⑤[7]	CH2 Industrial shipment settings gain value	_		System
⑤[8]	CH3 Industrial shipment settings offset value	_	_	System
⑤[9]	CH3 Industrial shipment settings gain value	_	_	System
⑤[10]	CH4 Industrial shipment settings offset value	_	_	System
⑤[11]	CH4 Industrial shipment settings gain value	-	_	System
§[12]	CH5 Industrial shipment settings offset value	-	_	System
<u>৩</u> [13]	CH5 Industrial shipment settings gain value	_	_	System
<u>৩ [4]</u>	CH6 Industrial shipment settings offset value	_	_	System
s[15]	CH6 Industrial shipment settings gain value	_	_	System
<u>\$[16]</u>	CH7 Industrial shipment settings offset value	_	_	System
s[17]	CH7 Industrial shipment settings gain value	_	_	System
<u>s</u> [18]	CH8 Industrial shipment settings offset value	_		System
<u>\$</u> [19]	CH8 Industrial shipment settings gain value	_	_	System
s [20]	CH1 User range settings offset value	_	_	System
s[21]	CH1 User range settings gain value	_	-	System
\$[22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
\$[26]	CH4 User range settings offset value	_	-	System
§ [27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	_	System
s [29]	CH5 User range settings gain value	_	-	System
⑤ [30]	CH6 User range settings offset value	_	-	System
s [31]	CH6 User range settings gain value	_	-	System
s [32]	CH7 User range settings offset value	-	_	System
⑤ [33]	CH7 User range settings gain value	_	-	System
s [34]	CH8 User range settings offset value	_	-	System
\$ [35]	CH8 User range settings gain value	_	-	System

(4) Q64AD-GH

Other than 0 Error completion (error code) Image: Completion (error code) 0 [2] Pass data classification setting Specify the voltage specified 0: Voltage specified 0: Voltage specified 0000rH to 0000FH 0000rH 0000FH User 0 [3] System area - - - - - 0 [4] OH1 industrial shipment settings offset value (1) - - - System 0 [6] CH1 industrial shipment settings offset value (H) - - - System 0 [7] CH1 industrial shipment settings offset value (H) - - System 0 [8] CH2 industrial shipment settings offset value (L) - - System 0 [10] CH2 industrial shipment settings offset value (L) - - System 0 [11] CH2 industrial shipment settings offset value (L) - - System 0 [12] CH3 industrial shipment settings offset value (L) - - System 0 [13] CH3 industrial shipment settings offset value (L) - - System 0 [14] CH3 industr	Device	Item	Setting data	Setting range	Setting side
O[1] Completion status 0 ::Normal completion Other than 0 : Error completion (error code) - Syste O[2] Pass data classification setting Specify the voltage current of the offset/gain values to be read. Object offset/gain values to percent offset/gain value (h) - - - - - - - - - - - - - - - - - - - - - - - - - - - - Syste - - - - - - Syste - - - Syste - - - Syste - - - Syste -	s [0]	System area	-	-	-
Other than 0 Error completion (error code) Annual State 0[2] Pass data classification setting Specify the voltage specified 00000+10 00000+11 0[3] System area - - - - 0[4] CH1 Industrial shipment settings offset value (L) - - - - 0[6] CH1 Industrial shipment settings offset value (L) - - - - System 0[7] CH1 Industrial shipment settings offset value (L) - - - System 0[8] CH2 Industrial shipment settings offset value (L) - - - System 0[9] CH2 Industrial shipment settings offset value (L) - - System - System 0[10] CH2 Industrial shipment settings offset value (L) - - System - System 0[11] CH2 Industrial shipment settings offset value (L) - - System - System 0[11] CH2 Industrial shipment settings offset value (L) - - System <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
O[2] Pass data classification setting Specify the voltage specified 0: Voltage specified 0: CV Voltage specified 1: Current specified	<u></u> জ[1]	Completion status		-	System
be read. 0: Voltage specified 1: Current specified spec					
C(2) Pass data classification setting 1: Current specified 0000FH Use 0:[3] System area - - - - - 0:[4] CH1 Industrial shipment settings offset value (L) - - - System 0:[6] CH1 Industrial shipment settings offset value (L) - - - System 0:[6] CH1 Industrial shipment settings gain value (L) - - - System 0:[7] CH1 Industrial shipment settings gain value (L) - - System 0:[8] CH2 Industrial shipment settings gain value (L) - - System 0:[10] CH2 Industrial shipment settings offset value (L) - - System 0:[12] CH3 Industrial shipment settings offset value (L) - - System 0:[13] CH3 Industrial shipment settings offset value (L) - - System 0:[14] CH3 Industrial shipment settings offset value (L) - - System 0:[16] CH4 Industrial shipment settings offset value (L) <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
Image: Second Procession of Control Processic Processic Procession of Control Procession Of Control P	s[2]	Pass data classification setting			User
C [3] System area - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - Syste C [6] CH1 Industrial shipment settings gain value (L) - - - - Syste - - Syste Syste - Syste - Syste Syste Syste Syste Syste Syste Syste Syste - - Syste Syste Syste Syste Syste Syste Syste Syste Syste Syst			·	0000FH	
O[4] CH1 Industrial shipment settings offset value (L) - - Syste O[6] CH1 Industrial shipment settings gain value (L) - - Syste O[7] CH1 Industrial shipment settings gain value (L) - - Syste O[8] CH2 Industrial shipment settings gain value (L) - - Syste O[9] CH2 Industrial shipment settings offset value (L) - - Syste O[10] CH2 Industrial shipment settings offset value (L) - - Syste O[11] CH2 Industrial shipment settings offset value (L) - - Syste O[11] CH3 Industrial shipment settings offset value (L) - - Syste O[13] CH3 Industrial shipment settings gain value (L) - - Syste O[14] CH4 Industrial shipment settings gain value (L) - - Syste O[16] CH4 Industrial shipment settings gain value (L) - - Syste O[17] CH4 Industrial shipment settings gain value (L) - - Syste O[17] CH4 Industrial shipment settings gain value (L) - -			0 to 0 CH4 CH3 CH2 CH1		
C161 CH1 Industrial shipment settings offset value (H) - - Syste C161 CH1 Industrial shipment settings agin value (L) - - Syste C171 CH1 Industrial shipment settings agin value (L) - - Syste C181 CH2 Industrial shipment settings offset value (L) - - Syste C191 CH2 Industrial shipment settings agin value (L) - - Syste C110 CH2 Industrial shipment settings agin value (L) - - Syste C111 CH2 Industrial shipment settings offset value (L) - - Syste C111 CH3 Industrial shipment settings agin value (L) - - Syste C113 CH3 Industrial shipment settings agin value (L) - - Syste C113 CH4 Industrial shipment settings agin value (L) - - Syste C116 CH4 Industrial shipment settings agin value (L) - - Syste C117 CH4 Industrial shipment settings agin value (L) - - Syste C119 CH4 Industrial shipment settings agin value (L) - - Syste <td>\$[3]</td> <td>System area</td> <td>_</td> <td>-</td> <td>-</td>	\$[3]	System area	_	-	-
O [5]CH1 Industrial shipment settings offset value (H)SysteO [6]CH1 Industrial shipment settings gain value (L)SysteO [7]CH1 Industrial shipment settings offset value (L)SysteO [8]CH2 Industrial shipment settings offset value (H)SysteO [10]CH2 Industrial shipment settings offset value (H)SysteO [10]CH2 Industrial shipment settings offset value (L)SysteO [11]CH2 Industrial shipment settings offset value (L)SysteO [12]CH3 Industrial shipment settings offset value (L)SysteO [13]CH3 Industrial shipment settings offset value (L)SysteO [16]CH4 Industrial shipment settings offset value (L)SysteO [17]CH4 Industrial shipment settings offset value (L)SysteO [17]CH4 Industrial shipment settings offset value (L)SysteO [19]CH4 Industrial shipment settings gain value (H)SysteO [20]CH1 User range settings offset value (L)SysteO [22]CH1 User range settings offset value (L)SysteO [23]CH1 User range settings offset value (L)SysteO [24]CH2 User range settings offset value (L)SysteO [24]CH2 User range settings off	s [4]	CH1 Industrial shipment settings offset value (L)			Custom
O [7]CH1 Industrial shipment settings gain value (H)	s [5]	CH1 Industrial shipment settings offset value (H)	_	-	System
© [7] CH1 Industrial shipment settings offset value (H)	⑤ [6]	CH1 Industrial shipment settings gain value (L)			Quatant
OldCH2Industrial shipment settings offset value (H)SystemO[10]CH2 Industrial shipment settings gain value (L)SystemO[11]CH2 Industrial shipment settings offset value (H)SystemO[12]CH3 Industrial shipment settings offset value (H)SystemO[13]CH3 Industrial shipment settings offset value (H)SystemO[14]CH3 Industrial shipment settings offset value (H)SystemO[15]CH3 Industrial shipment settings gain value (L)SystemO[16]CH4 Industrial shipment settings offset value (H)SystemO[17]CH4 Industrial shipment settings offset value (H)SystemO[18]CH4 Industrial shipment settings gain value (L)SystemO[19]CH4 Industrial shipment settings offset value (H)SystemO[20]CH1 User range settings offset value (L)SystemO[21]CH1 User range settings offset value (H)SystemO[22]CH1 User range settings offset value (H)SystemO[22]CH2 User range settings offset value (L)SystemO[22]CH2 User range settings offset value (L)SystemO[23]CH2 User range settings offset value (H)SystemO[26]CH2 User range settings offset value (L)SystemO[26]	⑤ [7]	CH1 Industrial shipment settings gain value (H)	-	-	System
Image: System of the settings offset value (H)System of the settings of the settings of the value (L)Image: System of the settings of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)System of the settings of the value (L)Image: System of the settings of the value (L)Syste		CH2 Industrial shipment settings offset value (L)			a <i>i</i>
© [10] CH2 Industrial shipment settings gain value (L) - Syste © [11] CH2 Industrial shipment settings offset value (H) - - Syste © [12] CH3 Industrial shipment settings offset value (H) - - Syste © [13] CH3 Industrial shipment settings offset value (H) - - Syste © [14] CH3 Industrial shipment settings gain value (L) - - Syste © [16] CH4 Industrial shipment settings gain value (L) - - Syste © [16] CH4 Industrial shipment settings offset value (H) - - Syste © [17] CH4 Industrial shipment settings offset value (H) - - Syste © [18] CH4 Industrial shipment settings gain value (L) - - Syste © [19] CH4 Industrial shipment settings gain value (L) - - Syste © [20] CH1 User range settings offset value (L) - - Syste © [21] CH1 User range settings gain value (L) - - Syste © [22] CH1 User range settings fiset value (H) - - Syste <td></td> <td>CH2 Industrial shipment settings offset value (H)</td> <td>-</td> <td>_</td> <td>System</td>		CH2 Industrial shipment settings offset value (H)	-	_	System
© [11] CH2 Industrial shipment settings gain value (H)		CH2 Industrial shipment settings gain value (L)			
CH3 CH3 Industrial shipment settings offset value (H) - - Syste © [14] CH3 Industrial shipment settings gain value (L) - - Syste © [15] CH3 Industrial shipment settings offset value (L) - - Syste © [16] CH4 Industrial shipment settings offset value (L) - - Syste © [17] CH4 Industrial shipment settings offset value (H) - - Syste © [17] CH4 Industrial shipment settings agin value (L) - - Syste © [19] CH4 Industrial shipment settings gain value (L) - - Syste © [20] CH1 User range settings offset value (L) - - Syste © [21] CH1 User range settings offset value (L) - - Syste © [22] CH1 User range settings gain value (L) - - Syste © [23] CH1 User range settings offset value (L) - - Syste © [26] CH2 User range settings gain value (L) - - Syste © [26] CH2 User range settings gain value (L) - - Syste	s[11]	CH2 Industrial shipment settings gain value (H)	-	-	System
Image: System of the set		CH3 Industrial shipment settings offset value (L)			
C [15]CH3 Industrial shipment settings gain value (H)System© [16]CH4 Industrial shipment settings offset value (L)System© [17]CH4 Industrial shipment settings gain value (H)System© [18]CH4 Industrial shipment settings gain value (L)System© [19]CH4 Industrial shipment settings gain value (L)System© [20]CH1 User range settings offset value (H)System© [21]CH1 User range settings gain value (H)System© [22]CH1 User range settings gain value (L)System© [23]CH1 User range settings offset value (L)System© [24]CH2 User range settings offset value (L)System© [25]CH2 User range settings offset value (H)System© [26]CH2 User range settings offset value (L)System© [27]CH2 User range settings offset value (L)System© [28]CH3 User range settings offset value (L)System© [29]CH3 User range settings offset value (H)System© [30]CH3 User range settings offset value (L)System© [30]CH3 User range settings gain value (L)System© [30]CH3 User range settings gain value (L)System© [30]CH3 User range settings gain value (L) <td><u>জ</u>[13]</td> <td>CH3 Industrial shipment settings offset value (H)</td> <td>-</td> <td>-</td> <td>System</td>	<u>জ</u> [13]	CH3 Industrial shipment settings offset value (H)	-	-	System
© [15] CH3 Industrial shipment settings gain value (H) - Syste © [16] CH4 Industrial shipment settings offset value (L) - - Syste © [17] CH4 Industrial shipment settings offset value (H) - - Syste © [18] CH4 Industrial shipment settings gain value (L) - - Syste © [19] CH4 Industrial shipment settings gain value (H) - - Syste © [19] CH4 Industrial shipment settings gain value (H) - - Syste © [20] CH1 User range settings offset value (H) - - Syste © [21] CH1 User range settings gain value (H) - - Syste © [22] CH1 User range settings gain value (L) - - Syste © [23] CH1 User range settings offset value (L) - - Syste © [24] CH2 User range settings offset value (L) - - Syste © [25] CH2 User range settings offset value (L) - - Syste © [27] CH2 User range settings offset value (L) - - Syste © [26]		CH3 Industrial shipment settings gain value (L)			
Signal		CH3 Industrial shipment settings gain value (H)	_	-	System
S[17] CH4 Industrial shipment settings offset value (H) - - Syste S[18] CH4 Industrial shipment settings gain value (L) - - Syste S[19] CH4 Industrial shipment settings gain value (H) - - Syste S[20] CH1 User range settings offset value (L) - - Syste S[21] CH1 User range settings offset value (H) - - Syste S[22] CH1 User range settings gain value (L) - - Syste S[23] CH1 User range settings offset value (L) - - Syste S[24] CH2 User range settings offset value (L) - - Syste S[25] CH2 User range settings gain value (L) - - Syste S[26] CH2 User range settings gain value (L) - - Syste S[26] CH2 User range settings gain value (L) - - Syste S[27] CH2 User range settings offset value (L) - - Syste S[29] CH3 User range settings offset value (H) - - Syste S[29] CH3 User range s	s[16]	CH4 Industrial shipment settings offset value (L)			
S [18] CH4 Industrial shipment settings gain value (L) - - Syste S [19] CH4 Industrial shipment settings gain value (H) - - Syste S [20] CH1 User range settings offset value (L) - - Syste S [21] CH1 User range settings offset value (H) - - Syste S [22] CH1 User range settings gain value (L) - - Syste S [23] CH1 User range settings gain value (L) - - Syste S [24] CH2 User range settings offset value (L) - - Syste S [25] CH2 User range settings offset value (L) - - Syste S [25] CH2 User range settings gain value (L) - - Syste S [26] CH2 User range settings gain value (L) - - Syste S [27] CH2 User range settings gain value (L) - - Syste S [28] CH3 User range settings offset value (L) - - Syste S [29] CH3 User range settings gain value (L) - - Syste S [30] CH3 User range	s[17]	CH4 Industrial shipment settings offset value (H)	_	-	System
S[19] CH4 Industrial shipment settings gain value (H) - - System S[20] CH1 User range settings offset value (L) - - System S[21] CH1 User range settings offset value (H) - - System S[22] CH1 User range settings gain value (L) - - System S[23] CH1 User range settings gain value (H) - - System S[24] CH2 User range settings offset value (L) - - System S[25] CH2 User range settings offset value (H) - - System S[26] CH2 User range settings gain value (L) - - System S[26] CH2 User range settings gain value (L) - - System S[27] CH2 User range settings gain value (L) - - System S[28] CH3 User range settings offset value (L) - - System S[29] CH3 User range settings offset value (H) - - System S[30] CH3 User range settings gain value (L) - - System S[30] CH3 User range settings	s[18]	CH4 Industrial shipment settings gain value (L)			
S [21] CH1 User range settings offset value (H)	s [19]	CH4 Industrial shipment settings gain value (H)	-	-	System
Image: Sige 1 contract of the section of the sectin of the sectin of the section of the section	s [20]	CH1 User range settings offset value (L)			
© [22]CH1 User range settings gain value (L) <t< td=""><td></td><td>CH1 User range settings offset value (H)</td><td>_</td><td>-</td><td>System</td></t<>		CH1 User range settings offset value (H)	_	-	System
§ [23] CH1 User range settings gain value (H) Image: settings offset value (L) Image: settings offset value (L) Image: settings offset value (H) Image: settings offset value (L) Image: settings offset value (H) Image: settings offset value (H) Image: settings offset value (L) Image: settings off	\$[22]	CH1 User range settings gain value (L)			
Image: Section of the term of the term of the term of t	\$[23]	CH1 User range settings gain value (H)	-	-	System
S[25] CH2 User range settings offset value (H) - - System S[26] CH2 User range settings gain value (L) - - System S[27] CH2 User range settings gain value (H) - - System S[27] CH2 User range settings gain value (H) - - System S[28] CH3 User range settings offset value (L) - - System S[29] CH3 User range settings offset value (H) - - System S[30] CH3 User range settings gain value (L) - - System		CH2 User range settings offset value (L)			
Image: Sign of		CH2 User range settings offset value (H)	-	_	System
Image: Signal system Image: Signal system <td< td=""><td></td><td>CH2 User range settings gain value (L)</td><td></td><td></td><td></td></td<>		CH2 User range settings gain value (L)			
(\$ [28] CH3 User range settings offset value (L)		CH2 User range settings gain value (H)	-	_	System
Image: Signed settings offset value (H) - - System Image: Signed settings gain value (L) - - System		CH3 User range settings offset value (L)			
(s) [30] CH3 User range settings gain value (L) – – Syste		CH3 User range settings offset value (H)	-	_	System
– – Syste		CH3 User range settings gain value (L)			
(s) [31] Ons User range settings gain value (T)	<u>\$[</u> 31]	CH3 User range settings gain value (H)	-	_	System
(s) [32] CH4 User range settings offset value (L)		CH4 User range settings offset value (L)			
(s) [33] CH4 User range settings offset value (H) – – System		CH4 User range settings offset value (H)	-	_	System
(s) [34] CH4 User range settings gain value (L)		CH4 User range settings gain value (L)			
(s) [35] CH4 User range settings gain value (H) – – System		CH4 User range settings gain value (H)	-	-	System

(5) Q62AD-DGH

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
<u></u> জ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
\$[2] \$[3]	System area	_	_	-
⑤[4]	CH1 Industrial shipment settings offset value (L)			System
s [5]	CH1 Industrial shipment settings offset value (H)	_	-	System
⑤[6]	CH1 Industrial shipment settings gain value (L)			System
⑤ [7]	CH1 Industrial shipment settings gain value (H)	_	-	System
§[8]	CH2 Industrial shipment settings offset value (L)			System
s [9]	CH2 Industrial shipment settings offset value (H)	_	-	System
s [10]	CH2 Industrial shipment settings gain value (L)			System
s[11]	CH2 Industrial shipment settings gain value (H)	_	-	System
\$[12] to \$[19]	System area	_	_	-
s [20]	CH1 User range settings offset value (L)			System
s [21]	CH1 User range settings offset value (H)	_	-	System
s [22]	CH1 User range settings gain value (L)			System
s [23]	CH1 User range settings gain value (H)	_	_	System
s [24]	CH2 User range settings offset value (L)			System
<u></u> ا	CH2 User range settings offset value (H)		_	Gystem
§ [26]	CH2 User range settings gain value (L)	_	_	System
§ [27]	CH2 User range settings gain value (H)	_	_	Gystem
\$[28] to \$[35]	System area	_	_	-

G_OGLOAD

(6) Q68AD-G

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	Ñü	_	_
		The instruction completion status is stored.		
ঙ[1]	Completion status	0 :Normal completion Other than 0 :Error completion (error code)	-	System
		Specify the voltage/current of the offset/gain values to		
		be read.		
୍ରାପା	Pass data classification setting	0: Voltage specified	0000н to	User
S [2]		1: Current specified	00FFн	0301
		b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 0 to 0 CH8CH7CH6CH5CH4CH3CH2CH1		
<u></u> ا	System area	_	-	-
<u>জ</u> [4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤ [6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§ [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
s [11]	CH4 Industrial shipment settings gain value	_	-	System
⑤ [12]	CH5 Industrial shipment settings offset value	_	-	System
s[13]	CH5 Industrial shipment settings gain value	_	_	System
⑤ [14]	CH6 Industrial shipment settings offset value	_	-	System
⑤ [15]	CH6 Industrial shipment settings gain value	_	-	System
⑤ [16]	CH7 Industrial shipment settings offset value	_	_	System
⑤ [17]	CH7 Industrial shipment settings gain value	_	_	System
⑤ [18]	CH8 Industrial shipment settings offset value	_	-	System
⑤ [19]	CH8 Industrial shipment settings gain value	_	-	System
s[20]	CH1 User range settings offset value	_	_	System
s[21]	CH1 User range settings gain value	_	_	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
<u></u> ال	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	_	System
s[26]	CH4 User range settings offset value	_	-	System
s[27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s[31]	CH6 User range settings gain value	_	_	System
s [32]	CH7 User range settings offset value	_	-	System
s [33]	CH7 User range settings gain value	_	-	System
s [34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	_	-	System

(7) Q66AD-DG

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	_
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
জ [2] জ [3]	System area	_	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
⑤ [5]	CH1 Industrial shipment settings gain value	-	-	System
<u>\$</u> [6]	CH2 Industrial shipment settings offset value	_	-	System
S [7]	CH2 Industrial shipment settings gain value	-	-	System
S [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
S[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
⑤ [13]	CH5 Industrial shipment settings gain value	_	-	System
⑤ [14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
\$ [16] to \$ [19]	System area	_	_	-
s [20]	CH1 User range settings offset value	_	-	System
s [21]	CH1 User range settings gain value	_	-	System
\$ [22]	CH2 User range settings offset value	_	-	System
\$ [23]	CH2 User range settings gain value	_	-	System
\$ [24]	CH3 User range settings offset value	_	-	System
\$ [25]	CH3 User range settings gain value	_	-	System
\$ [26]	CH4 User range settings offset value	_	-	System
<u>\$</u> [27]	CH4 User range settings gain value	_	-	System
<u>\$</u> [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
S[31]	CH6 User range settings gain value	_	-	System
(\$ [32] to (\$ [35]	System area	_	-	_

(8) Q62DAN/Q62DA

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
<u>ি</u> [2]	Pass data classification setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified b15 b2 b1 b0 0 to 0 CH.2 CH.1	0000н to 0003н	User
\$[3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
\$ [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤ [6]	CH2 Industrial shipment settings offset value	-	-	System
S [7]	CH2 Industrial shipment settings gain value	_	-	System
§ [8]	CH1 User range settings offset value	_	-	System
s [9]	CH1 User range settings gain value	-	-	System
<u>ঙ</u> [10]	CH2 User range settings offset value	-	-	System
\$ [11]	CH2 User range settings gain value	_	-	System

(9) Q64DAN/Q64DA/L60DA4

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	Pass data classification setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH.4 CH.3 CH.2 CH.1	0000н to 0000Fн	User
⑤ [3]	System area	-	-	-
§ [4]	CH1 Industrial shipment settings offset value	_	-	System
\$ [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
§ [7]	CH2 Industrial shipment settings gain value	_	-	System
(8)	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
<u></u> \$[11]	CH4 Industrial shipment settings gain value	_	-	System
<u></u> জ[12]	CH1 User range settings offset value	_	-	System
s [13]	CH1 User range settings gain value	_	-	System
s[14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	_	-	System
s [17]	CH3 User range settings gain value	_	-	System
⑤ [18]	CH4 User range settings offset value	_	-	System
s [19]	CH4 User range settings gain value	-	_	System

(10) Q68DAVN/Q68DAV

Device	Item	Setting data	Setting range	Setting side
§[0]	System area	_	-	_
		The instruction completion status is stored.		
<u></u> \$[1]	Completion status	0 : Normal completion	-	System
<u>()</u>		Other than 0 : Error completion (error code)		
⑤[2]	System area	-	-	-
\$[3] \$[4]	CH1 Industrial shipment settings offset value		_	System
	CH1 Industrial shipment settings gain value	_	_	System
<u> </u>	CH2 Industrial shipment settings offset value	_	_	System
© [6]	CH2 Industrial shipment settings gain value		_	System
<u> </u>	CH3 Industrial shipment settings offset value		_	System
§ [8]			-	-
[9]	CH3 Industrial shipment settings gain value			System
⑤ [10]	CH4 Industrial shipment settings offset value	-	-	System
s [11]	CH4 Industrial shipment settings gain value	-	-	System
<u> </u>	CH5 Industrial shipment settings offset value	_	-	System
s [13]	CH5 Industrial shipment settings gain value	-	-	System
s [14]	CH6 Industrial shipment settings offset value	_	-	System
<u>জ</u> [15]	CH6 Industrial shipment settings gain value	-	-	System
<u></u> জ[16]	CH7 Industrial shipment settings offset value	-	-	System
<u></u> জ[17]	CH7 Industrial shipment settings gain value	-	-	System
<u>জ</u> [18]	CH8 Industrial shipment settings offset value	-	-	System
s [19]	CH8 Industrial shipment settings gain value	-	-	System
s [20]	CH1 User range settings offset value		-	System
<u></u> জ[21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	-	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
s [26]	CH4 User range settings offset value	-	-	System
s [27]	CH4 User range settings gain value	-	-	System
\$[28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s[31]	CH6 User range settings gain value	_	-	System
s [32]	CH7 User range settings offset value	_	-	System
⑤ [33]	CH7 User range settings gain value	_	_	System
⑤ [34]	CH8 User range settings offset value	_	-	System
\$[35]	CH8 User range settings gain value	_	_	System

(11) Q68DAIN/Q68DAI

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
		The instruction completion status is stored.		
<u></u> \$[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
⑤ [2]				
§[3]	System area	-	-	-
<u></u>	CH1 Industrial shipment settings offset value	_	_	System
<u>\$[5]</u>	CH1 Industrial shipment settings gain value	_	_	System
§[6]	CH2 Industrial shipment settings offset value	_	_	System
<u>\$[7]</u>	CH2 Industrial shipment settings gain value	_	_	System
§[8]	CH3 Industrial shipment settings offset value	_	_	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
⑤ [11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
⑤ [13]	CH5 Industrial shipment settings gain value	_	-	System
⑤ [14]	CH6 Industrial shipment settings offset value	_	-	System
S [15]	CH6 Industrial shipment settings gain value	-	-	System
<u></u> [16]	CH7 Industrial shipment settings offset value	-	-	System
<u>\$</u> [17]	CH7 Industrial shipment settings gain value	-	-	System
s [18]	CH8 Industrial shipment settings offset value	-	-	System
ঙ [19]	CH8 Industrial shipment settings gain value	-	-	System
s [20]	CH1 User range settings offset value	-	-	System
s [21]	CH1 User range settings gain value	-	-	System
s [22]	CH2 User range settings offset value	-	-	System
s [23]	CH2 User range settings gain value	-	-	System
s [24]	CH3 User range settings offset value	-	-	System
s [25]	CH3 User range settings gain value	-	-	System
<u>\$</u> [26]	CH4 User range settings offset value	-	-	System
S [27]	CH4 User range settings gain value	_	-	System
\$ [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
ঙ [31]	CH6 User range settings gain value	_	-	System
\$ [32]	CH7 User range settings offset value	-	-	System
\$ [33]	CH7 User range settings gain value	-	-	System
\$ [34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	_	-	System

(12) Q62DA-FG

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	_
s[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
\$[2]	Pass data classification setting	Specify the user range setting to read the offset/gain values. 0H: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified $\underbrace{\begin{smallmatrix} b15 \text{ to } b12 & b11 \text{ to } b8 & b7 \text{ to } b4 & b3 \text{ to } b0}_{\text{OH} & \text{OH} & \text{CH2} & \text{CH1}}$	-	User
s [3]	System area	-	-	-
<u></u> [4]	CH1 Industrial shipment settings offset value (used for D/A)	-	-	System
ঙ [5]	CH1 Industrial shipment setting gain value (used for D/A)	_	-	System
s [6]	CH2 Industrial shipment settings offset value (used for D/A)	-	-	System
s[7]	CH2 Industrial shipment setting gain value (used for D/A)	-	_	System
§ [8]	CH1 Industrial shipment settings offset value (used for monitor output)	-	-	System
\$[9]	CH1 Industrial shipment settings gain value (used for monitor output)	_	-	System
s [10]	CH2 Industrial shipment settings offset value (used for monitor output)	-	_	System
S[11]	CH2 Industrial shipment settings gain value (used for monitor output)	_	_	System
S[12]	CH1 User range settings offset value (used for D/A)	-	_	System
s [13]	CH1 User range settings gain value (used for D/A)	_	_	System
s[14]	CH2 User range settings offset value (used for D/A)	-	-	System
s [15]	CH2 User range settings gain value (used for D/A)	-	-	System
s [16]	CH1 User range settings offset value (used for monitor output)	_	-	System
<u>ি</u> [17]	CH1 User range settings gain value (used for monitor output)	_	-	System
s [18]	CH2 User range settings offset value (used for monitor output)	-	_	System
গ্ [19]	CH2 User range settings gain value (used for monitor output)	_	_	System

(13) Q66DA-G

Device	Item	Setting data	Setting range	Setting side
S[0]	System area	_	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
ঙ [2]	Pass data classification setting	Specify the user range setting to read the offset/gain values. 0H: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified $b_{15}^{b_{12} b_{11}} b_{10}^{b_{10}} b_{9}^{b_{8}} b_{7}^{b_{6}} b_{6}^{b_{5}} b_{4}^{b_{3}} b_{2}^{b_{2}} b_{1}^{b_{1}} b_{0}^{b_{1}} b_{1}^{b_{1}} b_{1}^{b_{1}}$	0000н to 0АААн	User
s [3]	System area	_	-	-
s [4]	CH1 Industrial shipment settings offset value	_	-	System
<u>জ</u> [5]	CH1 Industrial shipment settings gain value	_	-	System
\$[6]	CH2 Industrial shipment settings offset value	-	-	System
S [7]	CH2 Industrial shipment settings gain value	_	-	System
<u></u> (8]	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
<u></u> জ[13]	CH5 Industrial shipment settings gain value	_	-	System
s [14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
\$[16]	CH1 User range settings offset value	_	-	System
s [17]	CH1 User range settings gain value	_	-	System
\$[18]	CH2 User range settings offset value	_	-	System
\$[19]	CH2 User range settings gain value	_	-	System
\$ [20]	CH3 User range settings offset value	_	-	System
\$[21]	CH3 User range settings gain value	-	-	System
\$ [22]	CH4 User range settings offset value	_	-	System
s [23]	CH4 User range settings gain value	_	-	System
<u>s</u> [24]	CH5 User range settings offset value	_	-	System
<u>\$</u> [25]	CH5 User range settings gain value	_	_	System
<u>\$</u> [26]	CH6 User range settings offset value	_	_	System
<u>\$</u> [27]	CH6 User range settings gain value	_	-	System
⑤ [28] to	System area	_	_	_
© [35]				

(14) Q64RD/Q64RD-G

Control data of Q64RD/Q64RD-G (1/5)

Device		Item	Setting data	Setting range	Setting side
s [0]		System area	-	-	-
\$	[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
(S)	[2]	System area	_	_	_
\$	[3]				
	⑤ [4]	3-wire CH1 Factory default offset value	-	-	System
	⑤ [5]	3-wire CH1 Factory default offset value	-	-	System
	⑤ [6]	3-wire CH1 Factory default gain value	-	-	System
Q64RD	⑤ [7]	3-wire CH1 Factory default gain value	-	-	System
QUHILD	(8)	3-wire CH1 User range settings offset value	-	-	System
	s [9]	3-wire CH1 User range settings offset value	-	-	System
	s [10]	3-wire CH1 User range settings gain value	-	-	System
	<u></u> জ[11]	3-wire CH1 User range settings gain value	-	-	System
	⑤ [4]	3-wire CH1 Factory default offset value (L)			Svotom
	s [5]	3-wire CH1 Factory default offset value (H)			System
	s [6]	3-wire CH1 Factory default gain value (L)			Svotom
Q64RD	(5) [7]	3-wire CH1 Factory default gain value (H)		-	System
-G	§ [8]	3-wire CH1 User range settings offset value (L)			System
	⑤ [9]	3-wire CH1 User range settings offset value (H)		-	System
	s [10]	3-wire CH1 User range settings gain value (L)			Sustem
	s[11]	3-wire CH1 User range settings gain value (H)	-	_	System
()	[12]	3-wire CH1 User range settings resistance offset value (L)			Sustem
()	[13]	3-wire CH1 User range settings resistance offset value (H)		_	System
<u>(s)</u>	[14]	3-wire CH1 User range settings resistance gain value (L)			Sustem
ঙা	[15]	3-wire CH1 User range settings resistance gain value (H)		_	System
	s [16]	4-wire CH1 Factory default offset value	-	_	System
	s[17]	4-wire CH1 Factory default offset value	-	_	System
	s [18]	4-wire CH1 Factory default gain value	-	_	System
06400	s [19]	4-wire CH1 Factory default gain value	-	_	System
Q64RD	<u>\$</u> [20]	4-wire CH1 User range settings offset value	-	_	System
	<u>জ</u> [21]	4-wire CH1 User range settings offset value	-	_	System
	\$[22]	4-wire CH1 User range settings gain value	-	-	System
	\$[23]	4-wire CH1 User range settings gain value	-	-	System

				Setting	Setting
Dev	vice	Item	Setting data	range	side
	S[16]	4-wire CH1 Factory default offset value (L)	_	_	System
	S[17]	4-wire CH1 Factory default offset value (H)	-	_	System
	s [18]	4-wire CH1 Factory default gain value (L)			System
Q64RD	S[19]	4-wire CH1 Factory default gain value (H)	_		Oystern
-G	S[20]	4-wire CH1 User range settings offset value (L)	_	_	System
	ি [21]	4-wire CH1 User range settings offset value (H)	_		Oystern
	s [22]	4-wire CH1 User range settings gain value (L)			System
	s [23]	4-wire CH1 User range settings gain value (H)	-	_	System
S [[24]	4-wire CH1 User range settings resistance offset value (L)			System
<u>ه</u> [[25]	4-wire CH1 User range settings resistance offset value (H)	-	_	System
<u>s</u> [[26]	4-wire CH1 User range settings resistance gain value (L)			System
<u></u> ([27]	4-wire CH1 User range settings resistance gain value (H)	_	_	System
	\$ [28]	3-wire CH2 Factory default offset value	_	-	System
	s [29]	3-wire CH2 Factory default offset value	_	-	System
	s [30]	3-wire CH2 Factory default gain value	_	-	System
Q64RD	\$[31]	3-wire CH2 Factory default gain value	-	-	System
Q04ND	\$[32]	3-wire CH2 User range settings offset value	-	-	System
	s [33]	3-wire CH2 User range settings offset value	_	-	System
	ি [34]	3-wire CH2 User range settings gain value	_	-	System
	\$ [35]	3-wire CH2 User range settings gain value	_	-	System
	s [28]	3-wire CH2 Factory default offset value (L)			System
	\$ [29]	3-wire CH2 Factory default offset value (H)			System
	\$[30]	3-wire CH2 Factory default gain value (L)			System
Q64RD	ি [31]	3-wire CH2 Factory default gain value (H)	_	_	System
-G	\$ [32]	3-wire CH2 User range settings offset value (L)			System
	\$ [33]	3-wire CH2 User range settings offset value (H)	_	_	System
	s [34]	3-wire CH2 User range settings gain value (L)			System
	\$ [35]	3-wire CH2 User range settings gain value (H)	_	-	System
S [[36]	3-wire CH2 User range settings resistance offset value (L)			System
§ [[37]	3-wire CH2 User range settings resistance offset value (H)	_	_	System
§ [[38]	3-wire CH2 User range settings resistance gain value (L)			System
s [39]		3-wire CH2 User range settings resistance gain value (H)	_	-	System
	s [40]	4-wire CH2 Factory default offset value	_	_	System
	s[41]	4-wire CH2 Factory default offset value	_	_	System
	s [42]	4-wire CH2 Factory default gain value	_	-	System
Q64RD	<u>ি</u> [43]	4-wire CH2 Factory default gain value	_	-	System
Q04KD	<u>\$</u> [44]	4-wire CH2 User range settings offset value	_	-	System
	<u></u> ال	4-wire CH2 User range settings offset value	_	-	System
	<u></u> [46]	4-wire CH2 User range settings gain value	-	_	System
	<u></u> آ (47]	4-wire CH2 User range settings gain value	-	-	System

Control data of Q64RD/Q64RD-G (2/5)

Device		Item	Setting data	Setting range	Setting side
	s [40]	4-wire CH2 Factory default offset value (L)		lange	
	⑤[41]	4-wire CH2 Factory default offset value (H)	-	-	System
	<u> </u>	4-wire CH2 Factory default gain value (L)			
Q64RD	<u> </u>	4-wire CH2 Factory default gain value (H)	-	-	System
-G	<u> </u>	4-wire CH2 User range settings offset value (L)			
	<u>\$</u> [45]	4-wire CH2 User range settings offset value (H)	-	-	System
	<u>\$</u> [46]	4-wire CH2 User range settings gain value (L)			
	<u>\$</u> [47]	4-wire CH2 User range settings gain value (H)	-	-	System
S	[48]	4-wire CH2 User range settings resistance offset value (L)			
5	[49]	4-wire CH2 User range settings resistance offset value (H)	-	-	System
	[50]	4-wire CH2 User range settings resistance gain value (L)			
5	[51]	4-wire CH2 User range settings resistance gain value (H)	-	-	System
	§ [52]	3-wire CH3 Factory default offset value	_	-	System
	\$ [53]	3-wire CH3 Factory default offset value	_	-	System
	§ [54]	3-wire CH3 Factory default gain value	_	-	System
00455	\$ [55]	3-wire CH3 Factory default gain value	_	-	System
Q64RD	§ [56]	3-wire CH3 User range settings offset value	_	-	System
	\$[57]	3-wire CH3 User range settings offset value	_	-	System
	s [58]	3-wire CH3 User range settings gain value	_	-	System
	s [59]	3-wire CH3 User range settings gain value	-	-	System
	§ [52]	3-wire CH3 Factory default offset value (L)			Quarterin
	s [53]	3-wire CH3 Factory default offset value (H)	-	_	System
	[54]	3-wire CH3 Factory default gain value (L)			Quarterin
Q64RD	s [55]	3-wire CH3 Factory default gain value (H)	-	-	System
-G	s [56]	3-wire CH3 User range settings offset value (L)			Custom
	\$ [57]	3-wire CH3 User range settings offset value (H)	-	_	System
	s [58]	3-wire CH3 User range settings gain value (L)			Custom
	s [59]	3-wire CH3 User range settings gain value (H)	-	-	System
S	[60]	3-wire CH3 User range settings resistance offset value (L)			Svotom
\$	[61]	3-wire CH3 User range settings resistance offset value (H)	_	-	System
\$	[62]	3-wire CH3 User range settings resistance gain value (L)			Svetom
s [63]		3-wire CH3 User range settings resistance gain value (H)	_	-	System
	s [64]	4-wire CH3 Factory default offset value	-	-	System
	s [65]	4-wire CH3 Factory default offset value	_	-	System
	s [66]	4-wire CH3 Factory default gain value	_	-	System
Q64RD	s [67]	4-wire CH3 Factory default gain value	_	-	System
Q04KD	<u>\$</u> [68]	4-wire CH3 User range settings offset value	_	-	System
	s [69]	4-wire CH3 User range settings offset value	_	-	System
	s [70]	4-wire CH3 User range settings gain value	_	_	System
	s[71]	4-wire CH3 User range settings gain value	_	-	System

Control data of Q64RD/Q64RD-G (3/5)

Device		Item	Setting data	Setting	Setting side
	s[64]	4-wire CH3 Factory default offset value (L)		range	Side
	S [65] S	4-wire CH3 Factory default offset value (H)	-	-	System
	§ [66]	4-wire CH3 Factory default gain value (L)			
Q64RD	§[67]	4-wire CH3 Factory default gain value (H)	-	_	System
-G	§ [68]	4-wire CH3 User range settings offset value (L)			
	⑤[69]	4-wire CH3 User range settings offset value (H)	-	-	System
	⑤[35] ⑤[70]	4-wire CH3 User range settings gain value (L)			
	<u>③[71]</u>	4-wire CH3 User range settings gain value (H)	-	-	System
s	[72]	4-wire CH3 User range settings resistance offset value (L)			
	[73]	4-wire CH3 User range settings resistance offset value (H)	-	-	System
	[74]	4-wire CH3 User range settings resistance gain value (L)			
	[75]	4-wire CH3 User range settings resistance gain value (H)	-	-	System
	<u>\$</u> [76]	3-wire CH4 Factory default offset value	_	_	System
	s[77]	3-wire CH4 Factory default offset value	_	_	System
	s [78]	3-wire CH4 Factory default gain value	_	_	System
	s [79]	3-wire CH4 Factory default gain value	_	-	System
Q64RD	<u>\$[80]</u>	3-wire CH4 User range settings offset value	_	-	System
	<u>\$[81]</u>	3-wire CH4 User range settings offset value	-	-	System
	§ [82]	3-wire CH4 User range settings gain value	-	-	System
	⑤ [83]	3-wire CH4 User range settings gain value	_	_	System
	⑤ [76]	3-wire CH4 Factory default offset value (L)			Quatant
	\$[77]	3-wire CH4 Factory default offset value (H)	-	_	System
	s [78]	3-wire CH4 Factory default gain value (L)			Sustam
Q64RD	s [79]	3-wire CH4 Factory default gain value (H)	-	_	System
-G	<u>\$</u> [80]	3-wire CH4 User range settings offset value (L)			Sustam
	s [81]	3-wire CH4 User range settings offset value (H)	-	_	System
	s [82]	3-wire CH4 User range settings gain value (L)			Sustam
	s [83]	3-wire CH4 User range settings gain value (H)	-	_	System
5	[84]	3-wire CH4 User range settings resistance offset value (L)			System
\$	[85]	3-wire CH4 User range settings resistance offset value (H)	_	_	System
S	[86]	3-wire CH4 User range settings resistance gain value (L)			System
S [87]		3-wire CH4 User range settings resistance gain value (H)	_	_	System
	\$ [88]	4-wire CH4 Factory default offset value	_	-	System
	\$ [89]	4-wire CH4 Factory default offset value	_	-	System
	s [90]	4-wire CH4 Factory default gain value	-	-	System
Q64RD	s [91]	4-wire CH4 Factory default gain value	_	_	System
	<u> ।</u> । । । । । । । ।	4-wire CH4 User range settings offset value	-	_	System
	<u>ি</u> [93]	4-wire CH4 User range settings offset value	_	_	System
	§ [94]	4-wire CH4 User range settings gain value	-	_	System
	\$ [95]	4-wire CH4 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (4/5)

Device		Item	Setting data	Setting range	Setting side
	s [88]	4-wire CH4 Factory default offset value (L)			System
	s [89]	4-wire CH4 Factory default offset value (H)	_	_	System
	s [90]	4-wire CH4 Factory default gain value (L)			System
Q64RD	s [91]	4-wire CH4 Factory default gain value (H)	_	-	System
-G	s [92]	4-wire CH4 User range settings offset value (L)			System
	s [93]	4-wire CH4 User range settings offset value (H)	_	_	System
	s [94]	4-wire CH4 User range settings gain value (L)			System
	s [95]	4-wire CH4 User range settings gain value (H)	_	_	System
S	[96]	4-wire CH4 User range settings resistance offset value (L)			System
<u>ি</u> [97]		4-wire CH4 User range settings resistance offset value (H)			Gystelli
<u>©</u> [98]		4-wire CH4 User range settings resistance gain value (L)			System
S	[99]	4-wire CH4 User range settings resistance gain value (H)	_	_	Gystelli

Control data of Q64RD/Q64RD-G (5/5)

(15) Q64TD/Q64TDV-GH

Device	Item	Setting data	Setting range	Setting side
\$[0]	System area	-	-	-
\$[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
<u> </u>	System area	_	-	_
<u>\$[4]</u>	CH1 Factory default offset value	_	_	System
s [5]	CH1 Factory default gain value	_	-	System
\$[6]	CH1 User range settings offset value	_	-	System
\$[7]	CH1 User range settings gain value	_	-	System
© [8]	CH1 User range settings thermal EMF offset value (L) CH1 User range settings thermal EMF offset value (H)	_	-	System
© [9] © [10]	CH1 User range settings thermal EMF gain value (L) CH1 User range settings thermal EMF gain value (L)		_	System
© [11]	CH2 Factory default offset value	_	_	System
<u></u> (জ [12] (জ [13])	CH2 Factory default gain value	_	_	System
⑤[13] ⑤[14]	CH2 User range settings offset value	_	_	System
⑤[14] ⑤[15]	CH2 User range settings gain value		_	System
⑤[10]	CH2 User range settings thermal EMF offset value (L)			
⑤[10] ⑤[17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
⑤[18]	CH2 User range settings thermal EMF gain value (L)			
<u> </u>	CH2 User range settings thermal EMF gain value (H)	-	-	System
<u>\$</u> [20]	CH3 Factory default offset value	_	_	System
s[21]	CH3 Factory default gain value	_	-	System
\$[22]	CH3 User range settings offset value	-	_	System
s [23]	CH3 User range settings gain value	_	-	System
\$[24]	CH3 User range settings thermal EMF offset value (L)			Custom
s [25]	CH3 User range settings thermal EMF offset value (H)	_	_	System
s [26]	CH3 User range settings thermal EMF gain value (L)			System
s [27]	CH3 User range settings thermal EMF gain value (H)	_	-	System
s [28]	CH4 Factory default offset value	_	-	System
s [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	_	-	System
\$[31]	CH4 User range settings gain value	-	_	System
ি [32]	CH4 User range settings thermal EMF offset value (L)	_	_	System
\$ [33]	CH4 User range settings thermal EMF offset value (H)	_		Gystern
s [34]	CH4 User range settings thermal EMF gain value (L)	_	_	System
\$ [35]	CH4 User range settings thermal EMF gain value (H)	_		Gystem

(16) Q68TD-G-H02(H01)

Control data of Q68TD-G-H02(H01) (1/2)

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	-
ি [1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
জ [2] জ [3]	System area	_	-	_
§ [4]	CH1 Factory default offset value	-	-	System
<u>\$</u> [5]	CH1 Factory default gain value	_	-	System
⑤[6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
§ [8]	CH1 User range settings thermal EMF offset value (L)			Quatara
s [9]	CH1 User range settings thermal EMF offset value (H)	_	_	System
⑤ [10]	CH1 User range settings thermal EMF gain value (L)			Quatara
<u>\$[11]</u>	CH1 User range settings thermal EMF gain value (H)	_	_	System
⑤ [12]	CH2 Factory default offset value	_	-	System
s [13]	CH2 Factory default gain value	-	-	System
⑤ [14]	CH2 User range settings offset value	_	-	System
⑤ [15]	CH2 User range settings gain value	-	-	System
s[16]	CH2 User range settings thermal EMF offset value (L)			Quatam
<u></u> آ [17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
⑤ [18]	CH2 User range settings thermal EMF gain value (L)			Quatam
⑤ [19]	CH2 User range settings thermal EMF gain value (H)	_	_	System
s [20]	CH3 Factory default offset value	-	-	System
s[21]	CH3 Factory default gain value	-	-	System
s [22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	_	-	System
\$[24]	CH3 User range settings thermal EMF offset value (L)			System
s [25]	CH3 User range settings thermal EMF offset value (H)	_	_	System
S[26]	CH3 User range settings thermal EMF gain value (L)			System
s [27]	CH3 User range settings thermal EMF gain value (H)	_	_	System
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	-	-	System
s [30]	CH4 User range settings offset value	-	-	System
S[31]	CH4 User range settings gain value	-	-	System
\$[32]	CH4 User range settings thermal EMF offset value (L)	_	_	System
\$ [33]	CH4 User range settings thermal EMF offset value (H)			
s [34]	CH4 User range settings thermal EMF gain value (L)		_	System
s [35]	CH4 User range settings thermal EMF gain value (H)			
S [36]	CH5 Factory default offset value	-	-	System
s [37]	CH5 Factory default gain value	-	-	System
s [38]	CH5 User range settings offset value	-	-	System
s [39]	CH5 User range settings gain value	-	-	System
<u>\$</u> [40]	CH5 User range settings thermal EMF offset value (L)		_	System
s[41]	CH5 User range settings thermal EMF offset value (H)			Cystom

Device	Item	Setting data	Setting range	Setting side
s [42]	CH5 User range settings thermal EMF gain value (L)			System
\$ [43]	CH5 User range settings thermal EMF gain value (H)	_	-	System
s [44]	CH6 Factory default offset value	-	-	System
s [45]	CH6 Factory default gain value	-	-	System
s [46]	CH6 User range settings offset value	_	-	System
s [47]	CH6 User range settings gain value	-	-	System
s [48]	CH6 User range settings thermal EMF offset value (L)			System
s [49]	CH6 User range settings thermal EMF offset value (H)		-	System
s [50]	CH6 User range settings thermal EMF gain value (L)			System
\$[51]	CH6 User range settings thermal EMF gain value (H)	_	-	System
\$ [52]	CH7 Factory default offset value	_	-	System
\$ [53]	CH7 Factory default gain value	-	-	System
\$ [54]	CH7 User range settings offset value	-	-	System
s [55]	CH7 User range settings gain value	_	-	System
\$ [56]	CH7 User range settings thermal EMF offset value (L)			System
\$[57]	CH7 User range settings thermal EMF offset value (H)	_	-	System
\$ [58]	CH7 User range settings thermal EMF gain value (L)			System
\$ [59]	CH7 User range settings thermal EMF gain value (H)	_	-	System
s [60]	CH8 Factory default offset value	-	-	System
s [61]	CH8 Factory default gain value	-	-	System
\$ [62]	CH8 User range settings offset value	_	-	System
s [63]	CH8 User range settings gain value	-	-	System
\$ [64]	CH8 User range settings thermal EMF offset value (L)			System
\$ [65]	CH8 User range settings thermal EMF offset value (H)	-	_	System
\$ [66]	CH8 User range settings thermal EMF gain value (L)			System
<u>\$[67]</u>	CH8 User range settings thermal EMF gain value (H)	-	_	System

Control data of Q68TD-G-H02(H01) (2/2)

G_OGLOAD

(17) Q68RD3-G

Control data of Q68RD3-G (1/2)

Device	Item	Setting data	Setting range	Setting side
\$ [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
\$[2] \$[3]	System area	-	-	-
\$ [4]	CH1 Factory default offset value	-	-	System
\$ [5]	CH1 Factory default gain value	-	-	System
\$[6]	CH1 User range settings offset value	-	-	System
\$[7]	CH1 User range settings gain value	-	-	System
S [8]	CH1 User range settings resistance offset value (L)			System
s [9]	CH1 User range settings resistance offset value (H)]	_	System
S[10]	CH1 User range settings resistance gain value (L)			System
s[11]	CH1 User range settings resistance gain value (H)		_	System
ি [12]	CH2 Factory default offset value	-	-	System
s [13]	CH2 Factory default gain value	-	-	System
<u></u> \$[14]	CH2 User range settings offset value	-	-	System
s [15]	CH2 User range settings gain value	-	-	System
s[16]	CH2 User range settings resistance offset value (L)			Sustam
s[17]	CH2 User range settings resistance offset value (H)	-	-	System
s[18]	CH2 User range settings resistance gain value (L)			Sustam
s [19]	CH2 User range settings resistance gain value (H)	-	-	System
s [20]	CH3 Factory default offset value	-	-	System
s[21]	CH3 Factory default gain value	-	-	System
s[22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	-	-	System
s[24]	CH3 User range settings resistance offset value (L)			Sustam
s [25]	CH3 User range settings resistance offset value (H)		_	System
s [26]	CH3 User range settings resistance gain value (L)			System
s [27]	CH3 User range settings resistance gain value (H)		-	System
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	-	-	System
s [30]	CH4 User range settings offset value	-	-	System
\$[31]	CH4 User range settings gain value	-	-	System
s [32]	CH4 User range settings resistance offset value (L)			System
s [33]	CH4 User range settings resistance offset value (H)	1 -	_	System
s [34]	CH4 User range settings resistance gain value (L)			Sustan
s [35]	CH4 User range settings resistance gain value (H)	-	-	System
s [36]	CH5 Factory default offset value	-	-	System
s [37]	CH5 Factory default gain value	-	-	System
\$[38]	CH5 User range settings offset value	-	-	System
\$[39]	CH5 User range settings gain value	-	-	System
s [40]	CH5 User range settings resistance offset value (L)			Custom
<u>\$[</u> 41]	CH5 User range settings resistance offset value (H)	1 -	-	System

Control data of Q68RD3-G (2	/2)
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Device	Item	Setting data	Setting range	Setting side
s [42]	CH5 User range settings resistance gain value (L)			System
s [43]	CH5 User range settings resistance gain value (H)	_	_	Oystern
s [44]	CH6 Factory default offset value	_	-	System
s [45]	CH6 Factory default gain value	_	-	System
s [46]	CH6 User range settings offset value	_	-	System
s [47]	CH6 User range settings gain value	_	-	System
⑤ [48]	CH6 User range settings resistance offset value (L)			System
s [49]	CH6 User range settings resistance offset value (H)	_	-	System
s [50]	CH6 User range settings resistance gain value (L)			System
<u></u> \$[51]	CH6 User range settings resistance gain value (H)	_	-	System
s [52]	CH7 Factory default offset value	_	-	System
s [53]	CH7 Factory default gain value	_	-	System
s [54]	CH7 User range settings offset value	_	-	System
s [55]	CH7 User range settings gain value	_	-	System
s [56]	CH7 User range settings resistance offset value (L)			System
s [57]	CH7 User range settings resistance offset value (H)	_	-	System
s [58]	CH7 User range settings resistance gain value (L)			System
s [59]	CH7 User range settings resistance gain value (H)	_	-	System
<u>\$[60]</u>	CH8 Factory default offset value	_	-	System
<u>\$[61]</u>	CH8 Factory default gain value	_	-	System
s [62]	CH8 User range settings offset value	_	-	System
s [63]	CH8 User range settings gain value	_	-	System
<u>\$[64]</u>	CH8 User range settings resistance offset value (L)			Svotom
<u>© [65]</u>	CH8 User range settings resistance offset value (H)	_	_	System
s [66]	CH8 User range settings resistance gain value (L)			Sustam
§[67]	CH8 User range settings resistance gain value (H)	-	_	System

G_OGLOAD

(18) Q61LD

Control data of Q61LD (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	System
\$[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
\$[2] \$[3]	System area	-	-	System
⑤ [4]	Load cell rated capacity (L)	-	_	System
⑤ [5]	Load cell rated capacity (H)	_	-	System
<u>\$</u> [6]	Load cell rated output	-	-	System
s[7]	Number of load cells in connection	-	-	System
<u>\$[8]</u>	Zero offset	-	-	System
s [9]	System area	-	-	System
S[10]	Maximum weighing capacity setting (L)	-	-	System
<u>জ</u> [11]	Maximum weighing capacity setting (H)	-	-	System
s [12]	Minimum division	-	-	System
<u></u> \$[13]	Decimal point position	-	-	System
s[14]	Unit	-	-	System
<u></u> §[15]	System area	-	-	System
s[16]	Standard weight setting (L)	-	-	System
S[17]	Standard weight setting (H)	-	_	System
S[18]	Installation site gravitational acceleration (L)	-	-	System
s[19]	Installation site gravitational acceleration (H)	-	-	System
s [20]	Calibration site gravitational acceleration (L)	-	-	System
s[21]	Calibration site gravitational acceleration (H)	-	-	System
\$[22]	Digital output zero correction value (L)	-	-	System
s [23]	Digital output zero correction value (H)	-	-	System
s[24]	Digital output span correction value (L)	-	-	System
s [25]	Digital output span correction value (H)	-	-	System
\$ [26] to \$ [33]	System area	_	_	System
<u></u> ال	Instrumentation amplifier gain setting	-	-	System
s [35]	A/D converter gain setting	_	_	System
<u>\$</u> [36]	Zero offset output value (L)	_	-	System
⑤ [37]	Zero offset output value (H)	_	_	System
\$[38]	Two-point zero calibration value (L)	_	-	System
<u>\$</u> [39]	Two-point zero calibration value (H)	-	_	System
<u>\$</u> [40]	Two-point span calibration value (L)	_	_	System
<u>\$[</u> 41]	Two-point span calibration value (H)	-	_	System
<u>\$</u> [42]				
to	System area	-	-	System
<u></u> ال				
<u></u> آ[54]	1.0mV/V zero calibration value (L)		-	System
s [55]	1.0mV/V zero calibration value (H)	-	_	System

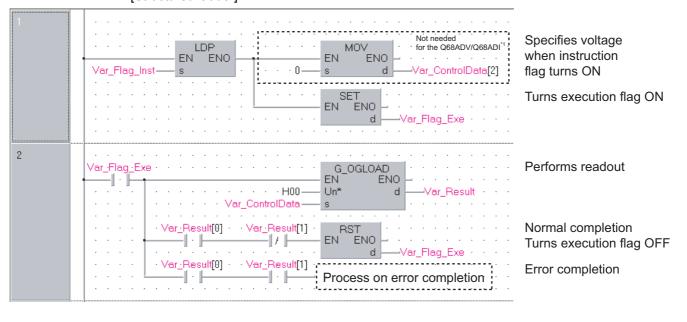
Control data	of Q61L	D (2/2)
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Device	Item	Setting data	Setting range	Setting side
s [56]	1.0mV/V span calibration value (L)	-	-	System
<u></u> (§[57]	1.0mV/V span calibration value (H)	-	-	System
s [58]	2.0mV/V zero calibration value (L)	_	-	System
s [59]	2.0mV/V zero calibration value (H)	-	-	System
s [60]	2.0mV/V span calibration value (L)	_	-	System
s [61]	2.0mV/V span calibration value (H)	_	-	System
\$ [62]	3.0mV/V zero calibration value (L)	-	-	System
\$ [63]	3.0mV/V zero calibration value (H)	_	-	System
\$ [64]	3.0mV/V span calibration value (L)	_	-	System
s [65]	3.0mV/V span calibration value (H)	_	-	System
s [66]				
to	System area	_	-	System
s [85]				

Program Example

The following program reads out the offset/gain value of the A/D converter module mounted on the I/O numbers from X/Y0 to X/YF.

*1: With the Q68ADV/Q68ADI, the pass data classification setting (control data [2]) does not need to be set.



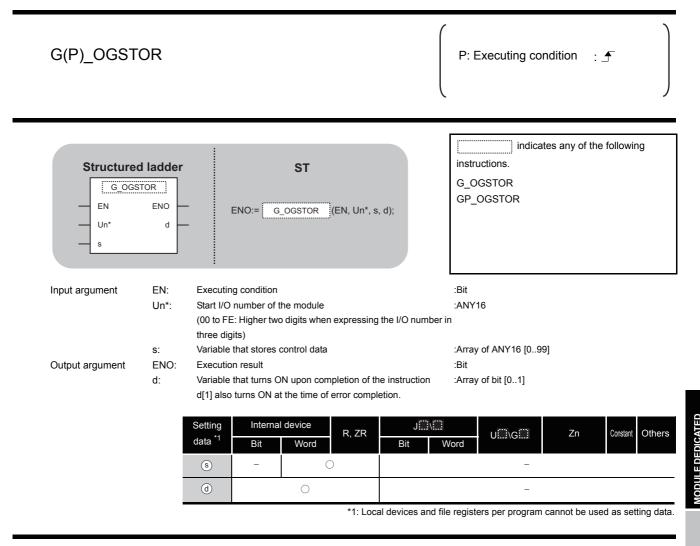
[Structured ladder]

[ST]

IF(LDP(TRUE,Var Flag Inst))THEN	(* Instruction flag ON *)
	ded for the Q68ADV/Q68ADI ^{*1}
SET(TRUE, Var_Flag_Exe); END_IF;	(* Turns execution flag ON *)
_	(* Evenution flog ON *)
IF(Var_Flag_Exe=TRUE)THEN GP_OGLOAD(TRUE, H0, Var_ControlData, IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN RST(TRUE, Var_Flag_Exe); ELSE	(* Execution finished *) (* Normal completion *)
(* Process on error completion *)]
END_IF; END_IF; END_IF;	

5.1.3 OGSTOR instruction

G_OGSTOR



Grant Function

This instruction restores the user range settings offset/gain values stored in the programmable controller CPU to the analog modules.

Control Data

(1) Q64AD

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
<u></u> জ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
©[2]	Pass data classification setting	The value set for pass data classification setting (\$)[2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH.4CH.3CH.2CH.1	0000н to 0000Fн	System
⑤ [3]	System area	-	-	_
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
<u></u> ال	CH1 Industrial shipment settings gain value	_	-	System
§[6]	CH2 Industrial shipment settings offset value	_	-	System
§ [7]	CH2 Industrial shipment settings gain value	_	-	System
s [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
ি [11]	CH4 Industrial shipment settings gain value	_	-	System
\$ [12]	CH1 User range settings offset value	_	-	System
s [13]	CH1 User range settings gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	-	-	System
S[17]	CH3 User range settings gain value	_	-	System
⑤ [18]	CH4 User range settings offset value	_	-	System
s [19]	CH4 User range settings gain value	_	-	System

(2) Q68ADV

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
s[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
জ[2] জ[3]	- System area	-	_	_
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
s[5]	CH1 Industrial shipment settings gain value	_	-	System
§[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH1 User range settings offset value	_	-	System
<u></u> জ[13]	CH1 User range settings gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	-	-	System
s [17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	-	System
s [19]	CH4 User range settings gain value	_	-	System
s [20]	CH1 User range settings offset value	_	-	System
s [21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
s [26]	CH4 User range settings offset value	_	-	System
s [27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s [31]	CH6 User range settings gain value	_	-	System
s [32]	CH7 User range settings offset value	_	-	System
s [33]	CH7 User range settings gain value	_	-	System
s [34]	CH8 User range settings offset value	_	-	System
\$ [35]	CH8 User range settings gain value	_	-	System

(3) Q68ADI

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	-
		The instruction completion status is stored.		_
s[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
§[2]				
⑤[3]	System area	-	-	-
<u>\$[4]</u>	CH1 Industrial shipment settings offset value	_	_	System
<u> </u>	CH1 Industrial shipment settings gain value	_	_	System
§[6]	CH2 Industrial shipment settings offset value		_	System
③[7]	CH2 Industrial shipment settings gain value	_	_	System
§[8]	CH3 Industrial shipment settings offset value		_	System
© [9]	CH3 Industrial shipment settings gain value		_	System
⑤[10]	CH4 Industrial shipment settings offset value		_	System
⑤[11]	CH4 Industrial shipment settings gain value		-	System
<u>s</u> [12]	CH5 Industrial shipment settings offset value	_	_	System
⑤[13]	CH5 Industrial shipment settings gain value	_	_	System
<u>\$</u> [14]	CH6 Industrial shipment settings offset value	_	_	System
<u>s</u> [15]	CH6 Industrial shipment settings gain value	_	_	System
s [16]	CH7 Industrial shipment settings offset value	_	_	System
s [17]	CH7 Industrial shipment settings gain value	_	_	System
s [18]	CH8 Industrial shipment settings offset value	_	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
\$ [20]	CH1 User range settings offset value	_	-	System
⑤ [21]	CH1 User range settings gain value	_	-	System
§ [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	_	System
s [26]	CH4 User range settings offset value	_	-	System
s [27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
\$[31]	CH6 User range settings gain value	_	_	System
\$[32]	CH7 User range settings offset value	_	_	System
s [33]	CH7 User range settings gain value	_	_	System
s [34]	CH8 User range settings offset value	_	-	System
\$[35]	CH8 User range settings gain value	_	-	System

(4) Q64AD-GH

Device	Item	Setting data	Setting range	Setting side
S[0]	System area	_	-	-
<u>জ</u> [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	Pass data classification setting	The value set for pass data classification setting (\$)[2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified $\frac{b15 \qquad b4 \qquad b3 \qquad b2 \qquad b1 \qquad b0}{[0] \ to \ 0 \qquad CH4 \ CH3 \ CH2 \ CH1]}$	0000н to 0000Fн	System
⑤ [3]	System area	_	_	_
§ [4]	CH1 Industrial shipment settings offset value (L)			Quatant
§ [5]	CH1 Industrial shipment settings offset value (H)	-	-	System
§[6]	CH1 Industrial shipment settings gain value (L)			Queterr
⑤ [7]	CH1 Industrial shipment settings gain value (H)	-	-	System
s [8]	CH2 Industrial shipment settings offset value (L)			System
s [9]	CH2 Industrial shipment settings offset value (H)	_	-	System
s [10]	CH2 Industrial shipment settings gain value (L)			Sustam
\$[11]	CH2 Industrial shipment settings gain value (H)		-	System
ঙ [12]	CH3 Industrial shipment settings offset value (L)			System
ঙ [13]	CH3 Industrial shipment settings offset value (H)		-	System
ঙ [14]	CH3 Industrial shipment settings gain value (L)	_	_	System
<u></u> জ [15]	CH3 Industrial shipment settings gain value (H)			Oystem
s [16]	CH4 Industrial shipment settings offset value (L)	_	_	System
s[17]	CH4 Industrial shipment settings offset value (H)			oystem
s [18]	CH4 Industrial shipment settings gain value (L)	_	_	System
s [19]	CH4 Industrial shipment settings gain value (H)			eyetem
s [20]	CH1 User range settings offset value (L)	_	_	System
s [21]	CH1 User range settings offset value (H)			eyetem
\$ [22]	CH1 User range settings gain value (L)	_	_	System
s [23]	CH1 User range settings gain value (H)			- Jotom
ঙ [24]	CH2 User range settings offset value (L)	_	_	System
\$ [25]	CH2 User range settings offset value (H)			- ,
\$ [26]	CH2 User range settings gain value (L)	_	_	System
\$ [27]	CH2 User range settings gain value (H)			,
ঙ [28]	CH3 User range settings offset value (L)	_	_	System
s [29]	CH3 User range settings offset value (H)			,
s [30]	CH3 User range settings gain value (L)	_	_	System
s [31]	CH3 User range settings gain value (H)			
\$ [32]	CH4 User range settings offset value (L)	_	-	System
s [33]	CH4 User range settings offset value (H)			-
\$ [34]	CH4 User range settings gain value (L)	_	_	System
\$ [35]	CH4 User range settings gain value (H)			-

(5) Q62AD-DGH

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
s [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2] s [3]	- System area	-	-	-
<u>জ</u> [4]	CH1 Industrial shipment settings offset value (L)	_	_	System
© [5]	CH1 Industrial shipment settings offset value (H)			
⑤ [6]	CH1 Industrial shipment settings gain value (L)	_	-	System
⑤ [7]	CH1 Industrial shipment settings gain value (H)			
(8)	CH2 Industrial shipment settings offset value (L)	_	-	System
⑤ [9]	CH2 Industrial shipment settings offset value (H)			
⑤ [10]	CH2 Industrial shipment settings gain value (L)	_	-	System
<u></u> জ [11]	CH2 Industrial shipment settings gain value (H)			
জ [12] to জ [19]	System area	_	-	-
s [20]	CH1 User range settings offset value (L)			Quatant
\$[21]	CH1 User range settings offset value (H)	-	-	System
\$[22]	CH1 User range settings gain value (L)			Quatant
\$[23]	CH1 User range settings gain value (H)	-	-	System
ঙ [24]	CH2 User range settings offset value (L)	_	_	System
\$ [25]	CH2 User range settings offset value (H)	_	_	Gystern
\$[26]	CH2 User range settings gain value (L)			System
s [27]	CH2 User range settings gain value (H)		_	System
\$[28] to \$[35]	System area	-	-	-

(6) Q68AD-G

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	_
		The instruction completion status is stored.		
s[1]	Completion status	0 :Normal completion Other than 0 :Error completion (error code)	-	System
		Other than 0 :Error completion (error code) Specify the voltage/current of the offset/gain values to		
		be read.		
	Pass data classification setting	0: Voltage specified	0000н to	User
\$[2]		1: Current specified	0000Fн	0361
		b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 0 to 0 CH8 CH7 CH6 CH5 CH4 CH3 CH2 CH1		
⑤ [3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
৩ [5]	CH1 Industrial shipment settings gain value	-	-	System
⑤[6]	CH2 Industrial shipment settings offset value	-	-	System
\$[7]	CH2 Industrial shipment settings gain value	_	-	System
\$[8]	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
<u></u> জ[11]	CH4 Industrial shipment settings gain value	_	-	System
S[12]	CH5 Industrial shipment settings offset value	_	-	System
ি [13]	CH5 Industrial shipment settings gain value	_	-	System
<u></u> §[14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
s[16]	CH7 Industrial shipment settings offset value	_	-	System
s[17]	CH7 Industrial shipment settings gain value	_	-	System
S[18]	CH8 Industrial shipment settings offset value	_	-	System
<u>s</u> [19]	CH8 Industrial shipment settings gain value	_	-	System
<u>s</u> [20]	CH1 User range settings offset value	_	-	System
s[21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	_	System
s [23]	CH2 User range settings gain value	_	_	System
s [24]	CH3 User range settings offset value	_	-	System
<u>ি</u> [25]	CH3 User range settings gain value	_	_	System
<u></u> ال	CH4 User range settings offset value	_	-	System
<u></u> ال	CH4 User range settings gain value	_	_	System
s [28]	CH5 User range settings offset value	_	_	System
s [29]	CH5 User range settings gain value	_	_	System
s [30]	CH6 User range settings offset value	_	_	System
ি [31]	CH6 User range settings gain value	_	_	System
s [32]	CH7 User range settings offset value	_	-	System
s [33]	CH7 User range settings gain value	_	_	System
⑤ [34]	CH8 User range settings offset value	_	_	System
\$ [35]	CH8 User range settings gain value	_	-	System

(7) Q66AD-DG

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	_	-	-
ঙ [1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
\$[2] \$[3]	System area	_	-	-
<u>\$[4]</u>	CH1 Industrial shipment settings offset value	_	_	System
<u>\$[5]</u>	CH1 Industrial shipment settings gain value	_	_	System
<u>\$[6]</u>	CH2 Industrial shipment settings offset value	_	-	System
§ [7]	CH2 Industrial shipment settings gain value	_	-	System
§ [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
⑤ [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
s [13]	CH5 Industrial shipment settings gain value	_	-	System
s[14]	CH6 Industrial shipment settings offset value	_	-	System
s[15]	CH6 Industrial shipment settings gain value	_	-	System
(\$) [16]to(\$) [19]	System area	_	_	-
s [20]	CH1 User range settings offset value	_	-	System
s[21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
<u></u> জ[26]	CH4 User range settings offset value	_	-	System
<u></u> জ[27]	CH4 User range settings gain value	_	-	System
\$[28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
s[31]	CH6 User range settings gain value	_	-	System
\$ [32] to \$ [35]	System area	_	-	-

(8) Q62DAN/Q62DA

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
©[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ [2]	Pass data classification setting	The value set for pass data classification setting (§) [2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 $b2$ $b1$ $b00$ $cH.2$ $CH.1$	0000н to 0003н	System
s[3]	System area	_	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
<u></u> ا	CH1 Industrial shipment settings gain value	_	-	System
\$[6]	CH2 Industrial shipment settings offset value	_	-	System
\$[7]	CH2 Industrial shipment settings gain value	_	-	System
s [8]	CH1 User range settings offset value	_	-	System
s [9]	CH1 User range settings gain value	_	-	System
s[10]	CH2 User range settings offset value	_	-	System
S[11]	CH2 User range settings gain value	_	_	System

(9) Q64DAN/Q64DA

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
s[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
\$[2]	Pass data classification setting	The value set for pass data classification setting (\$)[2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 cH4 CH3 CH2 CH1	0000н to 000Fн	System
⑤ [3]	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
<u></u> ال	CH1 Industrial shipment settings gain value	-	-	System
s [6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
s [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s[12]	CH1 User range settings offset value	_	-	System
s[13]	CH1 User range settings gain value	_	-	System
s[14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s[16]	CH3 User range settings offset value	_	-	System
\$[17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	_	System
s [19]	CH4 User range settings gain value	_	-	System

(10) Q68DAVN/Q68DAV

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2]	System area		_	
s [3]				
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
\$[5]	CH1 Industrial shipment settings gain value	-	-	System
⑤[6]	CH2 Industrial shipment settings offset value	-	-	System
\$[7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	-	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
S [11]	CH4 Industrial shipment settings gain value	-	-	System
ঙ [12]	CH5 Industrial shipment settings offset value	-	-	System
ঙ [13]	CH5 Industrial shipment settings gain value	-	-	System
ঙ [14]	CH6 Industrial shipment settings offset value	-	-	System
ঙ [15]	CH6 Industrial shipment settings gain value	-	-	System
s [16]	CH7 Industrial shipment settings offset value	-	-	System
s[17]	CH7 Industrial shipment settings gain value	-	-	System
s [18]	CH8 Industrial shipment settings offset value	-	-	System
s [19]	CH8 Industrial shipment settings gain value	-	-	System
s [20]	CH1 User range settings offset value	-	-	System
s[21]	CH1 User range settings gain value	-	-	System
s [22]	CH2 User range settings offset value	_	-	System
\$ [23]	CH2 User range settings gain value	-	-	System
\$[24]	CH3 User range settings offset value	_	-	System
\$ [25]	CH3 User range settings gain value	_	-	System
s [26]	CH4 User range settings offset value	_	-	System
\$ [27]	CH4 User range settings gain value	-	-	System
\$[28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
\$ [30]	CH6 User range settings offset value	_	-	System
\$[31]	CH6 User range settings gain value	_	-	System
\$[32]	CH7 User range settings offset value	_	-	System
\$[33]	CH7 User range settings gain value	_	-	System
\$[34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	_	-	System

(11) Q68DAIN/Q68DAI

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
		The instruction completion status is stored.		
s[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
⑤[2]	System area	-	-	-
<u></u> (জ][3]	CH1 Industrial abipment actings offset value			Sustam
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
s [5]	CH1 Industrial shipment settings gain value	-	-	System
<u>©</u> [6]	CH2 Industrial shipment settings offset value	-	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	-	-	System
<u>s</u> [8]	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	-	-	System
s[10]	CH4 Industrial shipment settings offset value	-	-	System
S [11]	CH4 Industrial shipment settings gain value	-	-	System
s [12]	CH5 Industrial shipment settings offset value	-	-	System
s[13]	CH5 Industrial shipment settings gain value	-	-	System
® [14]	CH6 Industrial shipment settings offset value	-	-	System
s [15]	CH6 Industrial shipment settings gain value	-	-	System
s[16]	CH7 Industrial shipment settings offset value	-	-	System
\$[17]	CH7 Industrial shipment settings gain value	_	-	System
s [18]	CH8 Industrial shipment settings offset value	_	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
\$ [20]	CH1 User range settings offset value	_	-	System
\$[21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	-	_	System
s[24]	CH3 User range settings offset value	-	-	System
<u>s</u> [25]	CH3 User range settings gain value	_	-	System
<u>③[26]</u>	CH4 User range settings offset value	_	_	System
⑤[27]	CH4 User range settings gain value	_	_	System
⑤[28]	CH5 User range settings offset value		-	System
⑤[20]	CH5 User range settings gain value	-	_	System
⑤ [30]	CH6 User range settings offset value	_	_	System
⑤[31]	CH6 User range settings gain value	_	_	System
\$[32]	CH7 User range settings offset value	_	_	System
⑤[32] ⑤[33]	CH7 User range settings gain value	_	_	System
	CH8 User range settings offset value	_	_	System
S [34] S [25]	CH8 User range settings gain value			System
s [35]		_	_	Gystem

(12) Q62DA-FG

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	_
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	Pass data classification setting	The value set for pass data classification setting (\$)[2] by the OGLOAD instruction is stored. 0H: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified 2H: User range setting 3 specified 0H 0H CH2 CH1	-	System
s [3]	System area	_	-	_
s [4]	CH1 Industrial shipment settings offset value (used for D/A)	_	_	System
ঙ [5]	CH1 Industrial shipment settings gain value (used for D/A)	_	-	System
s [6]	CH2 Industrial shipment settings offset value (used for D/A)	-	-	System
s[7]	CH2 Industrial shipment settings gain value (used for D/A)	-	-	System
\$[8]	CH1 Industrial shipment settings offset value (used for monitor output)	_	-	System
ঙ [9]	CH1 Industrial shipment settings gain value (used for monitor output)	_	-	System
<u>ঙ</u> [10]	CH2 Industrial shipment settings offset value (used for monitor output)	_	_	System
s [11]	CH2 Industrial shipment settings gain value (used for monitor output)	-	_	System
ঙ [12]	CH1 User range settings offset value (used for D/A)	_	_	System
<u>ঙ</u> [13]	CH1 User range settings gain value (used for D/A)	-	-	System
® [14]	CH2 User range settings offset value (used for D/A)	-	-	System
ঙ [15]	CH2 User range settings gain value (used for D/A)	_	-	System
ঙ [16]	CH1 User range settings offset value (used for monitor output)	-	_	System
s [17]	CH1 User range settings gain value (used for monitor output)	-	-	System
s [18]	CH2 User range settings offset value (used for monitor output)	_	_	System
s [19]	CH2 User range settings gain value (used for monitor output)	_	-	System

(13) Q66DA-G

Device	Item	Setting data	Setting range	Setting side
<u>s</u> [0]	System area	_	-	_
©[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
۰[2]	Pass data classification setting	The value set for pass data classification setting \textcircled{s} [2] by the OGLOAD instruction is stored. OH: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 $\fbox{b15}$ b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b1 b10 b10 b10 b10 b10 b10 b10 b10 b	_	User
s [3]	System area	_	-	-
s [4]	CH1 Industrial shipment settings offset value	-	-	System
<u></u> ال	CH1 Industrial shipment settings gain value	_	-	System
⑤ [6]	CH2 Industrial shipment settings offset value	-	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	-	-	System
s [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
S[11]	CH4 Industrial shipment settings gain value	_	-	System
<u></u> জ[12]	CH5 Industrial shipment settings offset value	_	-	System
s[13]	CH5 Industrial shipment settings gain value	_	-	System
s[14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
s [16]	CH1 User range settings offset value	_	-	System
s[17]	CH1 User range settings gain value	_	-	System
<u></u> জ[18]	CH2 User range settings offset value	_	-	System
s [19]	CH2 User range settings gain value	_	-	System
s [20]	CH3 User range settings offset value	_	-	System
s[21]	CH3 User range settings gain value	_	-	System
s [22]	CH4 User range settings offset value	_	-	System
s [23]	CH4 User range settings gain value	_	-	System
s [24]	CH5 User range settings offset value	_	-	System
s [25]	CH5 User range settings gain value	_	-	System
s [26]	CH6 User range settings offset value	_	-	System
s [27]	CH6 User range settings gain value	_	-	System
s [28]				
to	System area	-	-	-
s [35]				

(14) Q64RD/Q64RD-G

Control data of Q64RD/Q64RD-G (1/5)

De	vice	Item	Setting data	Setting range	Setting side
S	[0]	System area	-	-	-
6	2[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
S	[2]	System area	_	_	_
S	[3]				
	s [4]	3-wire CH1 Factory default offset value	-	-	System
	s [5]	3-wire CH1 Factory default offset value	-	-	System
	s [6]	3-wire CH1 Factory default gain value	-	-	System
Q64RD	s[7]	3-wire CH1 Factory default gain value	-	-	System
QUILD	s [8]	3-wire CH1 User range settings offset value	-	-	System
	<u>s</u> [9]	3-wire CH1 User range settings offset value	-	-	System
	<u>ঃ</u> [10]	3-wire CH1 User range settings gain value	-	-	System
	ঙ [11]	3-wire CH1 User range settings gain value	-	-	System
	⑤ [4]	3-wire CH1 Factory default offset value (L)		_	System
	s [5]	3-wire CH1 Factory default offset value (H)		-	System
	s [6]	3-wire CH1 Factory default gain value (L)			System
Q64RD	\$[7]	3-wire CH1 Factory default gain value (H)		_	System
-G	§ [8]	3-wire CH1 User range settings offset value (L)			System
	s [9]	3-wire CH1 User range settings offset value (H)		_	System
	s[10]	3-wire CH1 User range settings gain value (L)			Sustam
	s[11]	3-wire CH1 User range settings gain value (H)		-	System
S	[12]	3-wire CH1 User range settings resistance offset value (L)			System
S	[13]	3-wire CH1 User range settings resistance offset value (H)		-	System
S	[14]	3-wire CH1 User range settings resistance gain value (L)			Sustam
S	[15]	3-wire CH1 User range settings resistance gain value (H)		-	System
	s [16]	4-wire CH1 Factory default offset value	-	-	System
	\$[17]	4-wire CH1 Factory default offset value	-	-	System
	[18]	4-wire CH1 Factory default gain value	-	-	System
06400	s [19]	4-wire CH1 Factory default gain value	-	-	System
Q64RD	⑤[20]	4-wire CH1 User range settings offset value	-	_	System
	⑤[21]	4-wire CH1 User range settings offset value	-	-	System
	\$[22]	4-wire CH1 User range settings gain value	-	_	System
	\$[23]	4-wire CH1 User range settings gain value	_	-	System

Original 4-wire CH1 Factory default offset value (1) - - System OBJRD 0.118 4-wire CH1 Factory default dijn value (1) - - System 0.118 4-wire CH1 User range settings offset value (1) - - System 0.119 4-wire CH1 User range settings offset value (1) - - System 0.121 4-wire CH1 User range settings offset value (1) - - System 0.123 4-wire CH1 User range settings resistance offset value (1) - - System 0.123 4-wire CH1 User range settings resistance offset value (1) - - System 0.1201 4-wire CH1 User range settings resistance gain value (1) - - System 0.121 4-wire CH1 User range settings resistance gain value (1) - - System 0.123 3-wire CH2 Factory default offset value - - System 0.123 3-wire CH2 Factory default offset value - - System 0.123 3-wire CH2 Factory default offset value - - Syste	Dev	vice	Item	Setting data	Setting	Setting side
0110 4-wire CH1 Factory default diffect value (h) - - System 0180 4-wire CH1 Factory default gain value (L) - - System 0191 4-wire CH1 Getory default gain value (L) - - System 0120 4-wire CH1 User range settings offset value (h) - - System 0121 4-wire CH1 User range settings gain value (h) - - System 0122 4-wire CH1 User range settings resistance offset value (h) - - System 0122 4-wire CH1 User range settings resistance offset value (h) - - System 0123 4-wire CH1 User range settings resistance offset value (h) - - System 0123 4-wire CH1 User range settings resistance offset value - - System 0123 3-wire CH2 Factory default offset value - - System 0133 3-wire CH2 Factory default offset value - - System 0133 3-wire CH2 User range settings offset value - - System 0133<		@[16]	4-wire CH1 Eactory default offset value (L)		range	side
Other Other Other Other System 0(18) 4-wire CH1 Factory default gain value (H) - - System 0(20) 4-wire CH1 Eactory default gain value (H) - - System 0(20) 4-wire CH1 User range settings offset value (H) - - System 0(21) 4-wire CH1 User range settings gain value (L) - - System 0(21) 4-wire CH1 User range settings resistance offset value (H) - - System 0(21) 4-wire CH1 User range settings resistance offset value (L) - - System 0(21) 4-wire CH1 User range settings resistance offset value (L) - - System 0(22) 4-wire CH1 User range settings resistance offset value - - System 0(21) 3-wire CH2 Factory default offset value - - System 0(31) 3-wire CH2 Eactory default offset value - - System 0(32) 3-wire CH2 Eactory default offset value - - System 0(33) 3-wi				-	-	System
Octro 0[19] 4-wire CH1 Factory default gain value (h) - - System 0[20] 4-wire CH1 User range settings offset value (h) - - System 0[21] 4-wire CH1 User range settings offset value (h) - - System 0[22] 4-wire CH1 User range settings gain value (h) - - System 0[22] 4-wire CH1 User range settings resistance offset value (h) - - System 0[23] 4-wire CH1 User range settings resistance gain value (h) - - System 0[23] 4-wire CH1 User range settings resistance gain value (h) - - System 0[23] 4-wire CH1 User range settings resistance gain value (h) - - System 0[30] 3-wire CH2 Factory default offset value - - System 0[31] 3-wire CH2 Factory default offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings offset value - - System <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
G O(20) 4-wire CH1 User range settings offset value (L) - System O(21) 4-wire CH1 User range settings offset value (H) - - System O(22) 4-wire CH1 User range settings apin value (L) - - System O(22) 4-wire CH1 User range settings resistance offset value (H) - - System O(22) 4-wire CH1 User range settings resistance offset value (L) - - System O(22) 4-wire CH1 User range settings resistance offset value (L) - - System O(22) 4-wire CH1 User range settings resistance offset value (L) - - System O(21) 4-wire CH1 User range settings resistance gain value (H) - - System O(21) 4-wire CH2 Eactory default offset value - - System O(31) 3-wire CH2 Eactory default offset value - - System O(32) 3-wire CH2 User range settings offset value - - System O(33) 3-wire CH2 User range settings offset value (L) - - System<	06400			-	-	System
Ote Organ						
Cl22 4-wire CH1 User range settings gain value (L) - System 0[24] 4-wire CH1 User range settings resistance offset value (L) - - System 0[25] 4-wire CH1 User range settings resistance offset value (L) - - System 0[26] 4-wire CH1 User range settings resistance gain value (L) - - System 0[27] 4-wire CH1 User range settings resistance gain value (L) - - System 0[28] 4-wire CH2 User range settings resistance gain value (L) - - System 0[28] 3-wire CH2 Factory default gain value - - System 0[30] 3-wire CH2 Eactory default gain value - - System 0[31] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 Eactory default gain value - - System 0[34] 3-wire CH2 Eactory default offset value - - System 0[36]				-	-	System
O123 4-wire CH1 User range settings gain value (h) - - System O124 4-wire CH1 User range settings resistance offset value (l) - - System O125 4-wire CH1 User range settings resistance offset value (l) - - System O126 4-wire CH1 User range settings resistance gain value (l) - - System O127 4-wire CH1 User range settings resistance gain value (l) - - System O128 3-wire CH2 Factory default offset value - - System O130 3-wire CH2 Factory default offset value - - System O131 3-wire CH2 User range settings offset value - - System O133 3-wire CH2 User range settings offset value - - System O133 3-wire CH2 User range settings offset value - - System O133 3-wire CH2 Factory default dain value (l) - - System O133 3-wire CH2 Eactory default dain value (l) - - System O133						
O[24] 4-wire CH1 User range settings resistance offset value (L) - System O[25] 4-wire CH1 User range settings resistance gain value (L) - - System O[26] 4-wire CH1 User range settings resistance gain value (L) - - System O[27] 4-wire CH1 User range settings resistance gain value (H) - - System O[28] 3-wire CH2 Factory default offset value - - System O[28] 3-wire CH2 Factory default offset value - - System O[30] Swite CH2 Factory default offset value - - System O[31] 3-wire CH2 Factory default offset value - - System O[33] 3-wire CH2 Lear range settings gain value - - System O[33] 3-wire CH2 User range settings gain value - - System O[34] 3-wire CH2 Factory default offset value (L) - - System O[28] 3-wire CH2 Factory default offset value (L) - - System O[28] 3-wire				-	-	System
O[25] 4-wire CH1 User range settings resistance offset value (h) - - System O[26] 4-wire CH1 User range settings resistance gain value (h) - - System O[27] 4-wire CH1 User range settings resistance gain value (h) - - System O[28] 3-wire CH2 Factory default offset value - - System O[30] 3-wire CH2 Factory default gain value - - System O[31] 3-wire CH2 Factory default gain value - - System O[32] 3-wire CH2 Factory default gain value - - System O[33] 3-wire CH2 Factory default gain value - - System O[34] 3-wire CH2 Factory default gain value - - System O[34] 3-wire CH2 Factory default offset value (h) - - System O[35] 3-wire CH2 Factory default offset value (h) - - System O[34] 3-wire CH2 Factory default offset value (h) - - System O[31] 3-wire CH2 Fa						
Open 4-wire CH1 User range settings resistance gain value (L) - - System Open 3-wire CH2 Factory default offset value - - System Open 3-wire CH2 Factory default offset value - - System Open 3-wire CH2 Factory default gain value - - System Open 3-wire CH2 Factory default gain value - - System Open 3-wire CH2 Factory default gain value - - System Open 3-wire CH2 User range settings offset value - - System Open 3-wire CH2 User range settings offset value - - System Open 3-wire CH2 User range settings offset value - - System Open 3-wire CH2 User range settings offset value (L) - - System Open 3-wire CH2 Eactory default offset value (L) - - System Open 3-wire CH2 User range settings offset value (L) - - System Open 3-wire CH2 User range settings offset				-	-	System
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O[28] 3-wire CH2 Factory default offset value - - System O[64RD 0[30] 3-wire CH2 Factory default gain value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 Vaer range settings offset value - - System 0[33] 3-wire CH2 User range settings gain value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 User range settings gain value - - System 0[36] 3-wire CH2 Factory default offset value (L) - - System 0[30] 3-wire CH2 Factory default gain value (L) - - System 0[31] 3-wire CH2 User range settings offset value (L) - - System 0[36] 3-wire CH2 User range settings resistance offset value (L) - - System 0[36] 3-wire				-	-	System
Open Participant Open Participant Open Participant Open Participant 0 3-wire CH2 Factory default offset value - - System 0 3 3-wire CH2 Factory default gain value - - System 0 3 3-wire CH2 User range settings offset value - - System 0 3 3-wire CH2 User range settings gain value - - System 0 3 3-wire CH2 User range settings gain value - - System 0 3 3-wire CH2 User range settings gain value - - System 0 3 3-wire CH2 User range settings gain value (L) - - System 0 3 3-wire CH2 Factory default offset value (L) - - System 0 3 3-wire CH2 User range settings offset value (L) - - System 0 3 3-wire CH2 User range settings offset value (L) - - System 0 3 3-wire CH2 User range settings resistance offset value	(s)					Sustam
Octor 3-wire CH2 Factory default gain value - System O(30) 3-wire CH2 Factory default gain value - - System O(31) 3-wire CH2 Factory default gain value - - System O(33) 3-wire CH2 User range settings offset value - - System O(34) 3-wire CH2 User range settings gain value - - System O(35) 3-wire CH2 User range settings gain value - - System O(28) 3-wire CH2 User range settings gain value - - System O(28) 3-wire CH2 Eactory default offset value (L) - - System O(29) 3-wire CH2 User range settings offset value (L) - - System O(30) 3-wire CH2 User range settings offset value (L) - - System O(31) 3-wire CH2 User range settings resistance offset value (L) - - System O(32) 3-wire CH2 User range settings resistance offset value (L) - - System O(36) 3-wire CH2 User range set			· · · · · · · · · · · · · · · · · · ·	-		-
Older Older System Older 0 3				-		-
O64R0 O Sector System O[32] 3-wire CH2 User range settings offset value - - System O[33] 3-wire CH2 User range settings offset value - - System O[34] 3-wire CH2 User range settings gain value - - System O[35] 3-wire CH2 User range settings gain value - - System O[28] 3-wire CH2 Factory default offset value (L) - - System O[30] 3-wire CH2 Factory default gain value (H) - - System O[31] 3-wire CH2 Factory default gain value (H) - - System O[31] 3-wire CH2 User range settings offset value (L) - - System O[32] 3-wire CH2 User range settings offset value (L) - - System O[33] 3-wire CH2 User range settings gain value (L) - - System O[34] 3-wire CH2 User range settings resistance offset value (L) - - System O[36] 3-wire CH2 User range settings resistance gain value (H) <td></td> <td></td> <td></td> <td>-</td> <td></td> <td>-</td>				-		-
Other System © [33] 3-wire CH2 User range settings gain value - - System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 Factory default offset value (L) - - System © [29] 3-wire CH2 Factory default offset value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (L) - - System © [33] 3-wire CH2 Factory default gain value (H) - - System © [33] 3-wire CH2 Factory default gain value (H) - - System © [33] 3-wire CH2 User range settings offset value (L) - - System © [34] 3-wire CH2 User range settings gain value (L) - - System © [35] 3-wire CH2 User range settings resistance offset value (L) - - System © [36] 3-wire CH2 User range settings resistance gain value (L) - - <td>Q64RD</td> <td></td> <td></td> <td>_</td> <td>-</td> <td></td>	Q64RD			_	-	
OteARD 3-wire CH2 User range settings gain value - - System © [34] 3-wire CH2 User range settings gain value - - System © [28] 3-wire CH2 Factory default offset value (L) - - System © [29] 3-wire CH2 Factory default offset value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (H) - - System © [32] 3-wire CH2 User range settings offset value (H) - - System © [33] 3-wire CH2 User range settings offset value (H) - - System © [34] 3-wire CH2 User range settings offset value (H) - - System © [36] 3-wire CH2 User range settings resistance offset value (L) - - System © [36] 3-wire CH2 User range settings resistance offset value (L) - - System © [37] 3-wire CH2 User range settings resistance offset value (H) - - System				-	-	
Image: Classing of the constraints and the classing of the clase in the classing of the classing of the classing of the classin		s [33]	3-wire CH2 User range settings offset value	-	-	-
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OteA		\$ [35]	3-wire CH2 User range settings gain value	-	-	System
Image: Second		s [28]	3-wire CH2 Factory default offset value (L)	_	_	System
Q64RD • [31] 3-wire CH2 Factory default gain value (H) - - System • [31] 3-wire CH2 User range settings offset value (L) - - System • [33] 3-wire CH2 User range settings offset value (H) - - System • [33] 3-wire CH2 User range settings gain value (L) - - System • [36] 3-wire CH2 User range settings gain value (L) - - System • [36] 3-wire CH2 User range settings resistance offset value (L) - - System • [37] 3-wire CH2 User range settings resistance offset value (H) - - System • [38] 3-wire CH2 User range settings resistance offset value (H) - - System • [39] 3-wire CH2 User range settings resistance gain value (L) - - System • [39] 3-wire CH2 User range settings resistance gain value (L) - - System • [31] 4-wire CH2 Factory default offset value - - System • [40] 4-wire CH2 Factory default gain value - - System • [41] 4-wire CH2 Factory default ga		s [29]	3-wire CH2 Factory default offset value (H)			-
O64RD • [31] 3-wire CH2 Factory default gain value (H) - - System • • • • • • • • • • • • • • • • • • •		s [30]	3-wire CH2 Factory default gain value (L)	_	_	Svstem
Image: Signal indext of the Orle Oser range settings offset value (L) - - System Image: Signal indext of the Oser range settings offset value (H) - - System Image: Signal indext of the Oser range settings gain value (L) - - System Image: Signal indext of the Oser range settings gain value (L) - - System Image: Signal indext of the Oser range settings gain value (L) - - System Image: Signal indext of the Oser range settings resistance offset value (L) - - System Image: Signal indext of the Oser range settings resistance offset value (L) - - System Image: Signal indext of the Oser range settings resistance offset value (L) - - System Image: Signal indext of the Oser range settings resistance gain value (L) - - System Image: Signal indext of the Oser range settings resistance gain value (L) - - System Image: Signal indext of the Oser range settings resistance gain value (H) - - System Image: Signal indext of the Oser range settings resistance gain value (H) - - System Image: Signal indext of the Oser range settings offset value -		<u></u> §[31]	3-wire CH2 Factory default gain value (H)			-,
S [33] 3-wire CH2 User range settings gain value (H) - - System S [34] 3-wire CH2 User range settings gain value (L) - - System S [35] 3-wire CH2 User range settings gain value (H) - - System S [36] 3-wire CH2 User range settings resistance offset value (L) - - System S [37] 3-wire CH2 User range settings resistance offset value (H) - - System S [38] 3-wire CH2 User range settings resistance gain value (L) - - System S [39] 3-wire CH2 User range settings resistance gain value (L) - - System S [40] 4-wire CH2 User range settings resistance gain value (H) - - System S [41] 4-wire CH2 Factory default offset value - - System S [42] 4-wire CH2 Factory default gain value - - System S [42] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 User range settings offset value -	-G	\$ [32]	3-wire CH2 User range settings offset value (L)	_	_	System
Image: Second condition of the second condition		s [33]	3-wire CH2 User range settings offset value (H)			Cycloni
(§ [35] 3-wire CH2 User range settings gain value (H) - - System (§ [36] 3-wire CH2 User range settings resistance offset value (L) - - System (§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value -		s [34]	3-wire CH2 User range settings gain value (L)	_	_	System
S [37] 3-wire CH2 User range settings resistance offset value (H) - - System S [38] 3-wire CH2 User range settings resistance gain value (L) - - - System S [39] 3-wire CH2 User range settings resistance gain value (H) - - System S [39] 3-wire CH2 User range settings resistance gain value (H) - - System S [40] 4-wire CH2 Factory default offset value - - System S [41] 4-wire CH2 Factory default offset value - - System S [42] 4-wire CH2 Factory default gain value - - System S [42] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 User range settings offset value - - System S [44] 4-wire CH2 User range settings offset value - - System S [45] 4-wire CH2 User range settings offset value - - System S [46] 4-wire CH2 User range settings gain value - -<		\$ [35]	3-wire CH2 User range settings gain value (H)			Oystern
(§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value - - System	S	[36]	3-wire CH2 User range settings resistance offset value (L)	_	_	System
Sign 3-wire CH2 User range settings resistance gain value (H) - - System Sign 3-wire CH2 User range settings resistance gain value (H) - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings gain value - - System Sign 4-wire CH2 User range settings gain value - - System Sign 4	S	[37]	3-wire CH2 User range settings resistance offset value (H)			Oystern
(S)[39] 3-wire CH2 User range settings resistance gain value (H) - - System (S)[40] 4-wire CH2 Factory default offset value - - System (S)[41] 4-wire CH2 Factory default offset value - - System (S)[41] 4-wire CH2 Factory default offset value - - System (S)[42] 4-wire CH2 Factory default gain value - - System (S)[43] 4-wire CH2 Factory default gain value - - System (S)[43] 4-wire CH2 Factory default gain value - - System (S)[44] 4-wire CH2 User range settings offset value - - System (S)[45] 4-wire CH2 User range settings offset value - - System (S)[45] 4-wire CH2 User range settings offset value - - System (S)[46] 4-wire CH2 User range settings gain value - - System	s [38]		3-wire CH2 User range settings resistance gain value (L)			System
Q64RD \$\overline{1}\$ 4-wire CH2 Factory default offset value - - System \$\overline{1}\$ [42] 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ [43] 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ [43] 4-wire CH2 Factory default gain value - - System \$\overline{1}\$ [43] 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ [44] 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ [45] 4-wire CH2 User range settings offset value - - System \$\overline{1}\$ [46] 4-wire CH2 User range settings gain value - - System	s [39]		3-wire CH2 User range settings resistance gain value (H)	_	_	System
Q64RD		s [40]	4-wire CH2 Factory default offset value	-	-	System
Q64RD		s [41]	4-wire CH2 Factory default offset value	_	_	System
Q64RD		s [42]	4-wire CH2 Factory default gain value	-	-	System
(s) [44] 4-wire CH2 User range settings offset value - System (s) [45] 4-wire CH2 User range settings offset value - - System (s) [46] 4-wire CH2 User range settings gain value - - System	00400	⑤ [43]	4-wire CH2 Factory default gain value	-	-	System
Image: Second system - - System Image: Second system - - System Image: Second system - - System	Q64RD	⑤ [44]	4-wire CH2 User range settings offset value	-	-	System
(s) [46] 4-wire CH2 User range settings gain value – – System			4-wire CH2 User range settings offset value	_	-	System
			4-wire CH2 User range settings gain value	_	-	System
		<u>\$</u> [47]	4-wire CH2 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (2/5)

Dev	vice	Item	Setting data	Setting	Setting
	© [40]	4-wire CH2 Factory default offset value (L)		range	side
	জ [40] জ [41]	4-wire CH2 Factory default offset value (H)	-	-	System
	S [42] S	4-wire CH2 Factory default gain value (L)			
Q64RD	⑤[42] ⑤[43]	4-wire CH2 Factory default gain value (H)	_	-	System
-G	⑤[43] ⑤[44]	4-wire CH2 User range settings offset value (L)			
	(45) (45)	4-wire CH2 User range settings offset value (H)	_	-	System
	§[46]	4-wire CH2 User range settings gain value (L)			
	(40) (47)	4-wire CH2 User range settings gain value (H)	-	-	System
	[48]	4-wire CH2 User range settings resistance offset value (L)			
	[40]	4-wire CH2 User range settings resistance offset value (H)	-	-	System
	[49]	4-wire CH2 User range settings resistance gain value (L)			
	[50]	4-wire CH2 User range settings resistance gain value (H)	-	-	System
	§ [52]	3-wire CH3 Factory default offset value	_	_	System
		3-wire CH3 Factory default offset value	_	_	System
	⁽⁵³⁾	3-wire CH3 Factory default gain value	_	_	System
	§ [54]	3-wire CH3 Factory default gain value		_	System
Q64RD	© [55]	3-wire CH3 User range settings offset value			System
	© [56]		_	_	System
	<u> </u>	3-wire CH3 User range settings offset value	_	_	System
	© [58]	3-wire CH3 User range settings gain value	_	-	-
	s [59]	3-wire CH3 User range settings gain value	-	-	System
	s [52]	3-wire CH3 Factory default offset value (L)	-	-	System
	§ [53]	3-wire CH3 Factory default offset value (H)			
	<u></u>	3-wire CH3 Factory default gain value (L)	_	-	System
Q64RD -G	© [55]	3-wire CH3 Factory default gain value (H)			
Ū	⑤[56]	3-wire CH3 User range settings offset value (L) 3-wire CH3 User range settings offset value (H)	-	-	System
	<u> </u>	3-wire CH3 User range settings gain value (L)			
	\$ [58]		-	-	System
	© [59]	3-wire CH3 User range settings gain value (H)			
	[60]	3-wire CH3 User range settings resistance offset value (L) 3-wire CH3 User range settings resistance offset value (H)	_	-	System
	[61]				
© [62]		3-wire CH3 User range settings resistance gain value (L)	_	-	System
S	[63]	3-wire CH3 User range settings resistance gain value (H)			Custom
	⑤[64]	4-wire CH3 Factory default offset value	-	-	System
	© [65]	4-wire CH3 Factory default offset value	-	-	System
	§ [66]	4-wire CH3 Factory default gain value	-	-	System
Q64RD	⑤[67]	4-wire CH3 Factory default gain value	-	-	System
	<u> </u>	4-wire CH3 User range settings offset value	-	-	System
	<u> </u>	4-wire CH3 User range settings offset value	-	-	System
	<u>s</u> [70]	4-wire CH3 User range settings gain value	-	-	System
	\$[71]	4-wire CH3 User range settings gain value	-	-	System

Control data of Q64RD/Q64RD-G (3/5)

Dev	vice	Item	Setting data	Setting	Setting
	0 [64]	4-wire CH3 Factory default offset value (L)		range	side
	(§) [64]	4-wire CH3 Factory default offset value (H)	-	-	System
	\$ [65] \$ [66]	4-wire CH3 Factory default gain value (L)			
06400	⑤ [67]	4-wire CH3 Factory default gain value (H)	-	-	System
Q64RD -G		4-wire CH3 User range settings offset value (L)			
	(86) ©	4-wire CH3 User range settings offset value (H)	-	-	System
	\$ [69] \$ [70]	4-wire CH3 User range settings gain value (L)			
	(70) (71)	4-wire CH3 User range settings gain value (L)	-	-	System
		4-wire CH3 User range settings resistance offset value (L)			<u> </u>
	[72]	4-wire CH3 User range settings resistance offset value (H)	-	-	System
	[73]	4-wire CH3 User range settings resistance gain value (L)			
	[74]	4-wire CH3 User range settings resistance gain value (L)	-	-	System
<u> </u>	[75]	3-wire CH4 Factory default offset value	_	_	System
	© [76]	3-wire CH4 Factory default offset value	_	_	System
	③[77]	3-wire CH4 Factory default gain value	_	_	System
	③[78]	3-wire CH4 Factory default gain value	_		System
Q64RD	§ [79]		_		-
	(80)	3-wire CH4 User range settings offset value	-		System
	⑤[81]	3-wire CH4 User range settings offset value	-	-	System
	<u> </u>	3-wire CH4 User range settings gain value	-	-	System
	(s) [83]	3-wire CH4 User range settings gain value	-	-	System
	⑤ [76]	3-wire CH4 Factory default offset value (L)	-	-	System
	⑤ [77]	3-wire CH4 Factory default offset value (H)			
	<u>\$</u> [78]	3-wire CH4 Factory default gain value (L)	-	-	System
Q64RD -G	s [79]	3-wire CH4 Factory default gain value (H)			
-0	<u>(80]</u>	3-wire CH4 User range settings offset value (L)	_	_	System
	<u>\$</u> [81]	3-wire CH4 User range settings offset value (H)			
	\$ [82]	3-wire CH4 User range settings gain value (L)	_	_	System
	\$ [83]	3-wire CH4 User range settings gain value (H)			
S	[84]	3-wire CH4 User range settings resistance offset value (L)	_	_	System
S	[85]	3-wire CH4 User range settings resistance offset value (H)			
s [86]		3-wire CH4 User range settings resistance gain value (L)	-	_	System
\$	[87]	3-wire CH4 User range settings resistance gain value (H)			
	<u>(88]</u>	4-wire CH4 Factory default offset value	-	-	System
	<u>s</u> [89]	4-wire CH4 Factory default offset value	-	-	System
	s [90]	4-wire CH4 Factory default gain value	-	-	System
Q64RD	ঙ [91]	4-wire CH4 Factory default gain value	-	-	System
	ঙ [92]	4-wire CH4 User range settings offset value	_	-	System
	<u></u> জ [93]	4-wire CH4 User range settings offset value	_	-	System
	ঙ [94]	4-wire CH4 User range settings gain value	-	_	System
	s [95]	4-wire CH4 User range settings gain value	_	-	System

Control data of Q64RD/Q64RD-G (4/5)

Device		Item	Setting data	Setting range	Setting side
	\$ [88]	4-wire CH4 Factory default offset value (L)	_	_	System
	\$ [89]	4-wire CH4 Factory default offset value (H)			Oystern
	s [90]	4-wire CH4 Factory default gain value (L)	_	_	System
Q64RD	s [91]	4-wire CH4 Factory default gain value (H)			Oystem
-G	s [92]	4-wire CH4 User range settings offset value (L)		-	System
	s [93]	4-wire CH4 User range settings offset value (H)			
	s [94]	4-wire CH4 User range settings gain value (L)		_	System
	s [95]	4-wire CH4 User range settings gain value (H)			Gystern
S	[96]	4-wire CH4 User range settings resistance offset value (L)	_	_	System
S	[97]	4-wire CH4 User range settings resistance offset value (H)			Gystem
S	[98]	4-wire CH4 User range settings resistance gain value (L)	_	_	System
S	[99]	4-wire CH4 User range settings resistance gain value (H)			eyetem

Control data of Q64RD/Q64RD-G (5/5)

(15) Q64TD/Q64TDV-GH

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
©[2] ©[3]	System area	_	_	-
§ [4]	CH1 Factory default offset value	_	_	System
s [5]	CH1 Factory default gain value	_	-	System
§[6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
§ [8]	CH1 User range settings thermal EMF offset value (L)			
s [9]	CH1 User range settings thermal EMF offset value (H)	_	-	System
§ [10]	CH1 User range settings thermal EMF gain value (L)	_	_	System
<u></u> জ [11]	CH1 User range settings thermal EMF gain value (H)			
<u></u> জ[12]	CH2 Factory default offset value	_	-	System
<u></u> (জ [13]	CH2 Factory default gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
<u></u> জ [15]	CH2 User range settings gain value	_	-	System
s [16]	CH2 User range settings thermal EMF offset value (L)	-	-	System
s [17]	CH2 User range settings thermal EMF offset value (H)			
<u></u> জ[18]	CH2 User range settings thermal EMF gain value (L)	-	-	System
s [19]	CH2 User range settings thermal EMF gain value (H)			
s [20]	CH3 Factory default offset value	-	-	System
<u>ি</u> [21]	CH3 Factory default gain value	-	-	System
<u>ি</u> [22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
s [24]	CH3 User range settings thermal EMF offset value (L)	_	-	System
s [25]	CH3 User range settings thermal EMF offset value (H)			-
s [26]	CH3 User range settings thermal EMF gain value (L)	_	_	System
s [27]	CH3 User range settings thermal EMF gain value (H)			-
s [28]	CH4 Factory default offset value	_	-	System
\$[29]	CH4 Factory default gain value	-	-	System
\$ [30]	CH4 User range settings offset value	_	-	System
\$[31]	CH4 User range settings gain value	_	-	System
\$[32]	CH4 User range settings thermal EMF offset value (L)	_		System
s [33]	CH4 User range settings thermal EMF offset value (H)			-,
s [34]	CH4 User range settings thermal EMF gain value (L)	_	_	System
\$[35]	CH4 User range settings thermal EMF gain value (H)			Cycloni

(16) Q68TD-G-H02(H01)

Control data of Q68TD-G-H02(H01) (1/2)

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	_
<u>ি</u> [1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
s[2]	System area	-	_	_
⑤ [3]			_	_
⑤ [4]	CH1 Factory default offset value	-	-	System
\$[5]	CH1 Factory default gain value	-	-	System
s [6]	CH1 User range settings offset value	-	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
⑤[8]	CH1 User range settings thermal EMF offset value (L)			System
s [9]	CH1 User range settings thermal EMF offset value (H)	_	-	System
s[10]	CH1 User range settings thermal EMF gain value (L)			System
s[11]	CH1 User range settings thermal EMF gain value (H)	_	-	System
s [12]	CH2 Factory default offset value	_	-	System
s [13]	CH2 Factory default gain value	_	_	System
<u></u> জ[14]	CH2 User range settings offset value	_	_	System
<u></u> জ [15]	CH2 User range settings gain value	_	_	System
s [16]	CH2 User range settings thermal EMF offset value (L)	_	_	
s[17]	CH2 User range settings thermal EMF offset value (H)			System
s [18]	CH2 User range settings thermal EMF gain value (L)			
<u>\$</u> [19]	CH2 User range settings thermal EMF gain value (H)		-	System
s [20]	CH3 Factory default offset value	_	-	System
s[21]	CH3 Factory default gain value	_	-	System
\$[22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	_	System
s[24]	CH3 User range settings thermal EMF offset value (L)			-
s [25]	CH3 User range settings thermal EMF offset value (H)	_	-	System
<u>\$</u> [26]	CH3 User range settings thermal EMF gain value (L)			
<u>\$[27]</u>	CH3 User range settings thermal EMF gain value (H)	-	-	System
<u>\$[28]</u>	CH4 Factory default offset value	_	_	System
<u>s</u> [29]	CH4 Factory default gain value	_	_	System
<u> </u>	CH4 User range settings offset value	_	_	System
<u>\$[31]</u>	CH4 User range settings gain value	_	_	System
⑤[32]	CH4 User range settings thermal EMF offset value (L)			
⑤ [33]	CH4 User range settings thermal EMF offset value (H)	-	-	System
§ [34]	CH4 User range settings thermal EMF gain value (L)			
© [35]	CH4 User range settings thermal EMF gain value (H)	-	-	System
§ [36]	CH5 Factory default offset value	_	_	System
[37] [37]	CH5 Factory default gain value	_	_	System
©[37] ©[38]	CH5 User range settings offset value	_	_	System
⑤ [39]	CH5 User range settings gain value	_	_	System
@[99]				0,000

Device	Item	Setting data	Setting range	Setting side
s [40]	CH5 User range settings thermal EMF offset value (L)			Sustam
s[41]	CH5 User range settings thermal EMF offset value (H)	-	-	System
s [42]	CH5 User range settings thermal EMF gain value (L)			System
ঙ [43]	CH5 User range settings thermal EMF gain value (H)		_	System
\$[44]	CH6 Factory default offset value	-	-	System
ঙ [45]	CH6 Factory default gain value	_	-	System
\$[46]	CH6 User range settings offset value	_	-	System
s [47]	CH6 User range settings gain value	-	-	System
⑤ [48]	CH6 User range settings thermal EMF offset value (L)			System
s [49]	CH6 User range settings thermal EMF offset value (H)	_	_	System
\$ [50]	CH6 User range settings thermal EMF gain value (L)			System
ঙ[51]	CH6 User range settings thermal EMF gain value (H)	_	-	System
s [52]	CH7 Factory default offset value	_	-	System
s [53]	CH7 Factory default gain value	_	-	System
s [54]	CH7 User range settings offset value	_	-	System
\$ [55]	CH7 User range settings gain value	_	-	System
\$ [56]	CH7 User range settings thermal EMF offset value (L)			System
<u>ঃ</u> [57]	CH7 User range settings thermal EMF offset value (H)	_	_	Oystem
<u></u> জ [58]	CH7 User range settings thermal EMF gain value (L)			System
ঙ [59]	CH7 User range settings thermal EMF gain value (H)	_	_	Oystem
s [60]	CH8 Factory default offset value	_	-	System
\$[61]	CH8 Factory default gain value	_	-	System
\$[62]	CH8 User range settings offset value	_	-	System
§ [63]	CH8 User range settings gain value	-	-	System
\$[64]	CH8 User range settings thermal EMF offset value (L)	_		System
\$[65]	CH8 User range settings thermal EMF offset value (H)	_	_	Gystern
\$[66]	CH8 User range settings thermal EMF gain value (L)	_	_	System
s[67]	CH8 User range settings thermal EMF gain value (H)	-	_	System

Control data of Q68TD-G-H02(H01) (2/2)

(17) Q68RD3-G

Control data of Q68RD3-G (1/2)

Device	Item	Setting data	Setting range	Setting side
S [0]	System area	-	-	_
\$[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
ঙ [2] ঙ [3]	System area	-	-	-
§ [4]	CH1 Factory default offset value	_	-	System
§ [5]	CH1 Factory default gain value	_	-	System
\$[6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
⑤[8]	CH1 User range settings resistance offset value (L)			Questions
⑤ [9]	CH1 User range settings resistance offset value (H)		_	System
s [10]	CH1 User range settings resistance gain value (L)			Sustan
<u> </u> (।	CH1 User range settings resistance gain value (H)	-	_	System
s [12]	CH2 Factory default offset value	_	-	System
s [13]	CH2 Factory default gain value	-	-	System
s [14]	CH2 User range settings offset value	-	-	System
s [15]	CH2 User range settings gain value	_	-	System
s[16]	CH2 User range settings resistance offset value (L)			Sustam
s[17]	CH2 User range settings resistance offset value (H)	_	_	System
s [18]	CH2 User range settings resistance gain value (L)			Sustam
s [19]	CH2 User range settings resistance gain value (H)	_	_	System
s [20]	CH3 Factory default offset value	-	-	System
s[21]	CH3 Factory default gain value	-	-	System
\$[22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	-	-	System
s[24]	CH3 User range settings resistance offset value (L)			System
s [25]	CH3 User range settings resistance offset value (H)		_	System
s [26]	CH3 User range settings resistance gain value (L)			System
s [27]	CH3 User range settings resistance gain value (H)		_	Oystern
s [28]	CH4 Factory default offset value	-	-	System
\$[29]	CH4 Factory default gain value	-	-	System
\$[30]	CH4 User range settings offset value	-	-	System
\$[31]	CH4 User range settings gain value	-	-	System
\$[32]	CH4 User range settings resistance offset value (L)			System
s [33]	CH4 User range settings resistance offset value (H)		_	System
<u></u> জ[34]	CH4 User range settings resistance gain value (L)			System
<u>জ</u> [35]	CH4 User range settings resistance gain value (H)		_	Gystern
s [36]	CH5 Factory default offset value	_	-	System
\$[37]	CH5 Factory default gain value	-	_	System
s [38]	CH5 User range settings offset value	-	-	System

Control data of Q68RD3-G (2/2)

Device	Item	Setting data	Setting range	Setting side
s [39]	CH5 User range settings gain value	-	-	System
s [40]	CH5 User range settings resistance offset value (L)	_	_	System
s[41]	CH5 User range settings resistance offset value (H)			oyotom
s [42]	CH5 User range settings resistance gain value (L)	_	_	System
s [43]	CH5 User range settings resistance gain value (H)			oyotom
s [44]	CH6 Factory default offset value	_	-	System
\$ [45]	CH6 Factory default gain value	-	-	System
\$ [46]	CH6 User range settings offset value	-	-	System
\$ [47]	CH6 User range settings gain value	-	-	System
⑤ [48]	CH6 User range settings resistance offset value (L)			System
\$ [49]	CH6 User range settings resistance offset value (H)	_	_	Oystelli
s [50]	CH6 User range settings resistance gain value (L)		_	System
<u></u> \$[51]	CH6 User range settings resistance gain value (H)	_		
s [52]	CH7 Factory default offset value	_	-	System
s [53]	CH7 Factory default gain value	_	-	System
s [54]	CH7 User range settings offset value	_	-	System
\$ [55]	CH7 User range settings gain value	_	-	System
s [56]	CH7 User range settings resistance offset value (L)			System
\$[57]	CH7 User range settings resistance offset value (H)	_	_	
s [58]	CH7 User range settings resistance gain value (L)			Sustem
s [59]	CH7 User range settings resistance gain value (H)	-	-	System
s [60]	CH8 Factory default offset value	_	-	System
s[61]	CH8 Factory default gain value	_	-	System
\$ [62]	CH8 User range settings offset value	_	_	System
\$[63]	CH8 User range settings gain value	-	-	System
\$[64]	CH8 User range settings resistance offset value (L)			Quatara
s [65]	CH8 User range settings resistance offset value (H)	-	-	System
s [66]	CH8 User range settings resistance gain value (L)			Quatan
s [67]	CH8 User range settings resistance gain value (H)	-	-	System

(18) Q61LD

Control data of Q61LD (1/2)

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	_	-	System
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	-	System
\$[2] \$[3]	System area	-	-	System
§ [4]	Load cell rated capacity (L)	_	-	System
s [5]	Load cell rated capacity (H)	_	-	System
⑤[6]	Load cell rated output	_	-	System
⑤ [7]	Number of load cells in connection	_	-	System
⑤[8]	Zero offset	_	-	System
⑤ [9]	System area	_	-	System
<u>\$</u> [10]	Maximum weighing capacity setting (L)	_	-	System
⑤ [11]	Maximum weighing capacity setting (H)	_	-	System
⑤ [12]	Minimum division	_	-	System
⑤ [13]	Decimal point position	_	-	System
s [14]	Unit	_	-	System
⑤ [15]	System area	_	-	System
⑤ [16]	Standard weight setting (L)	_	-	System
⑤ [17]	Standard weight setting (H)	_	-	System
⑤ [18]	Installation site gravitational acceleration (L)	-	-	System
s [19]	Installation site gravitational acceleration (H)	_	-	System
<u>\$</u> [20]	Calibration site gravitational acceleration (L)	-	-	System
<u> </u> [21]	Calibration site gravitational acceleration (H)	_	-	System
s [22]	Digital output zero correction value (L)	-	-	System
s [23]	Digital output zero correction value (H)	-	-	System
s [24]	Digital output span correction value (L)	-	-	System
s [25]	Digital output span correction value (H)	_	-	System
 (\$ [26] to (\$ [33] 	System area	-	-	System
<u>\$</u> [34]	Instrumentation amplifier gain setting	_	-	System
⑤ [35]	A/D converter gain setting	_	_	System
s [36]	Zero offset output value (L)	_	-	System
⑤ [37]	Zero offset output value (H)	_	-	System
⑤ [38]	Two-point zero calibration value (L)	_	-	System
\$ [39]	Two-point zero calibration value (H)	_	-	System
<u>\$</u> [40]	Two-point span calibration value (L)	_	-	System
⑤ [41]	Two-point span calibration value (H)	_	-	System
© [42] to © [53]	System area	-	-	System
<u>(</u> 54]	1.0mV/V zero calibration value (L)	-	-	System
\$ [55]	1.0mV/V zero calibration value (H)	_	_	System

G_OGSTOR

Control data of Q61LD (2/2)

Device	Item	Setting data	Setting range	Setting side
s [56]	1.0mV/V span calibration value (L)	-	-	System
ঙ [57]	1.0mV/V span calibration value (H)	-	-	System
s [58]	2.0mV/V zero calibration value (L)	_	-	System
s [59]	2.0mV/V zero calibration value (H)	_	-	System
\$ [60]	2.0mV/V span calibration value (L)	_	-	System
s[61]	2.0mV/V span calibration value (H)	_	-	System
\$ [62]	3.0mV/V zero calibration value (L)	_	-	System
s [63]	3.0mV/V zero calibration value (H)	_	-	System
\$ [64]	3.0mV/V span calibration value (L)	_	-	System
s [65]	3.0mV/V span calibration value (H)	_	-	System
s [66]				
to	System area	_	-	System
s [85]				

(19) L60AD4

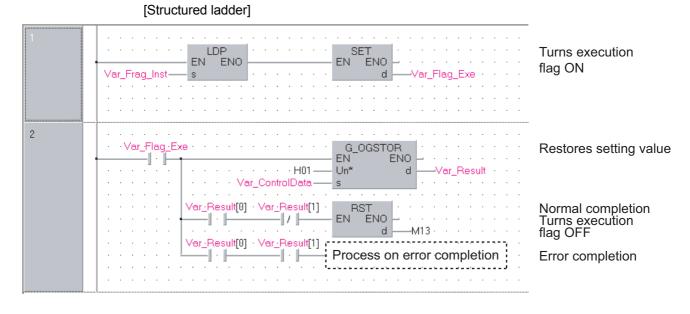
Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
ি [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ[2]	Stored data type setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified	0000н to 000Fн	User
\$[3]	System area	-	-	-
\$[4]	CH1 Industrial shipment settings offset value	_	-	System
<u>ঃ</u> [5]	CH1 Industrial shipment settings gain value	_	-	System
\$[6]	CH2 Industrial shipment settings offset value	_	-	System
§ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
⑤[9]	CH3 Industrial shipment settings gain value	_	-	System
<u></u> জ[10]	CH4 Industrial shipment settings offset value	_	-	System
ি [11]	CH4 Industrial shipment settings gain value	_	-	System
<u></u> জ[12]	CH1 User range settings offset value	_	-	System
<u></u> জ[13]	CH1 User range settings gain value	_	-	System
s[14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	-	-	System
<u></u> জ[16]	CH3 User range settings offset value	-	-	System
s[17]	CH3 User range settings gain value	_	-	System
⑤ [18]	CH4 User range settings offset value	_	-	System
s[19]	CH4 User range settings gain value	_	-	System

(20) L60DA4

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ[2]	Stored data type setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified	0000н to 000Fн	User
ঙ[3]	System area	-	-	_
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
<u></u> (5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
\$ [7]	CH2 Industrial shipment settings gain value	_	-	System
\$[8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
s [11]	CH4 Industrial shipment settings gain value	_	-	System
\$[12]	CH1 User range settings offset value	_	-	System
\$[13]	CH1 User range settings gain value	_	-	System
\$[14]	CH2 User range settings offset value	_	-	System
\$[15]	CH2 User range settings gain value	_	-	System
<u></u> \$[16]	CH3 User range settings offset value	_	-	System
<u></u> \$[17]	CH3 User range settings gain value	_	-	System
⑤ [18]	CH4 User range settings offset value	_	-	System
s[19]	CH4 User range settings gain value	_	-	System

Program Example

The following program restores the offset/gain setting value to the A/D converter module mounted on the I/O numbers from X/Y10 to X/Y1F when the flag turns ON.

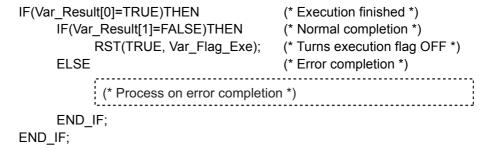


[ST]

IF(LDP(TRUE,Var_Flag_Inst))THEN SET(TRUE, Var_Flag_Exe); END_IF;

(* Instruction flag ON *) (* Turns execution flag ON *)

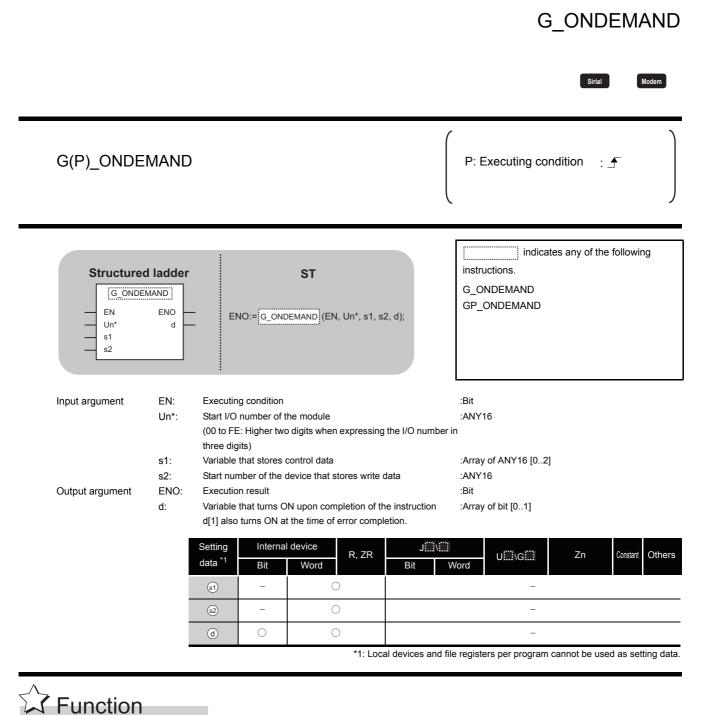
IF(Var_Flag_Exe=TRUE)THEN (* Execution flag ON *) GP_OGSTOR(TRUE, H0, Var_ControlData, Var_Result);(* Restores setting value *)



END_IF;

5.2 Serial Communication and Modem Interface Instruction

5.2.1 ONDEMAND instruction



5-60

This instruction sends data using the on-demand function of MC protocol.

Control Data

Device	Item	Setting data	Setting range	Setting side
st [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
st][1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[2]	Number of send data	Set the number of send data.	1 or more	User

/Program Example

[Structured ladder]

The following program sends data of devices from D10 to D11 using the on-demand function. (For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

PLS I ENO ·×53 On-demand transmission EN · III instruction pulse Var_Frag_Inst d 2 √ar_Frag_Inst Sets transmission MOV ΕN ENO channel to 1 1 d /ar_ControlData[0] Sets number of send data MOV ENO ΕN to 2 words 2 d /ar_ControlData[2] Sets send data MOV ΕN ENO to D10 to D11 H1234 d D10 MOV ΕN ENO H5678 d D11 Turns normal completion RST ΕN ÊNO flag OFF d /ar_Flag_Normal Turns error completion RST ΕN ENO flag OFF d /ar_Flag_Error Turns execution flag ON SET EN. ENO d √ar_Flag_Exe 3 /ar_Flag_Exe GP_ONDEMAND Performs on-demand EN ENO function transmission H00 Un* d Var_Result Var_ControlDate s1 D10 s2 4 Var_Result[1] Turns normal completion Var_Result[0] SET ΕN ENO -|| • ||--|| / ||flag ON d /ar_Flag_Normal Var_Result[1] Turns error completion SET ENO EN. -|| • ||flag ON d /ar_Flag_Error Turns execution flag OFF RST EN ENO d Var_Flag_Exe 🗉

[ST]	
PLS(X53, Var_Flag_Inst);	(* On-demand transmission instruction pulse *)
IF(Var_Flag_Inst=TRUE)THEN	(* Instruction flag ON *)
MOV(TRUE, 1, Var_ControlData[0]);	(* Sets transmission channel to 1 *)
MOV(TRUE, 2, Var_ControlData[2]);	(* Sets number of send data to 2 words *)
MOV(TRUE, H1234, D10);	(* Sets send data to D10 to D11 *)
MOV(TRUE, H5678, D11);	
RST(TRUE, Var_Flag_Normal);	(* Turns normal completion flag OFF *)
RST(TRUE, Var_Flag_Error);	(* Turns error completion flag OFF *)
SET(TRUE, Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Flag_Exe=TRUE)THEN	(* Execution flag ON *)
GP_ONDEMAND(TRUE, H0, Var_Co	ζ, ζ
_	(* Performs on-demand function transmission *)
END IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
SET(TRUE, Var_Flag_Normal)	,
ELSE	(* Error completion *)
SET(TRUE, Var_Flag_Error);	(* Turns error completion flag ON *)
END_IF;	
RST(TRUE, Var Flag Exe);	(* Turns execution flag OFF *)
END_IF;	(Tame excellenting of t)

⊠POINT

- 1. The communication status can be checked by the SPBUSY instruction.
- 2. Specify the capacity of the send data (stored in devices from D10 to D11 in the program example above) and the number of send data within the user-defined buffer memory range assigned for the on-demand function.

DDULE DEDICATED STRUCTION **G**

5.2.2 OUTPUT instruction

G(P)_OUTPUT P: Executing condition : 1 indicates any of the following instructions. **Structured ladder** ST G_OUTPUT G_OUTPUT GP_OUTPUT ΕN ENO ENO:= G_OUTPUT (EN, Un*, s1, s2, d); Un' d s1 s2 :Bit Input argument EN: Executing condition Un*: :ANY16 Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Variable that stores control data :Array of ANY16 [0..2] :ANY16 s2: Start number of the device that stores write data :Bit Output argument ENO: Execution result Variable that turns ON upon completion of the instruction :Array of bit [0..1] d: d[1] also turns ON at the time of error completion. Setting Internal device Others R, ZR U....\G.... Zn Constant data *1 Bit Word Ri Word (s1) \bigcirc (s2) _

*1: Local devices and file registers per program cannot be used as setting data.

G_OUTPUT

Sirial

Modem

Grant Function

This instruction sends data in the message format specified by the user using the nonprocedural protocol.

Device	Item	Setting data	Setting range	Setting side
st [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
st][1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends data of devices from D11 to D15 using the nonprocedural protocol. (For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

·×20 Transmission PLS EN. ENO instruction pulse d Var_Frag_Inst 2 /ar_Frag_Inst Sets send data \$MOV ΕN ENO "ABCDEFG" D11 s d Sets completion code ΕN ENO HOAD D15 d Sets transmission MC ΕN ENO channel to 1 1 ControlData[0] d Sets number of send мον ΕN ENO data to 5 words ontrolData[2] 5 Sends data G_OUTPUT EN ENO · H00 Un* Var Result d Var ControlData s1 · D11 s2 3 Var_Result[0] Var_Result[1] Turns normal completion SET · || / ||-ΕN ENO flag ON ar_Flag_Normal d Var_Result[1] Stores error code MOV ΕN ENO ŀŀ Var_controlData[1] /ar_ErrorCode d s SET ENO Turns error completion ΕN flag ON d /ar_Flag_Error 4 ·X21 Turns normal completion RST ENO - I- I-ΕN flag OFF d ar_Flag_Normal Turns error completion ÉNO EN. flag OFF √ar_Flag_Error∙ d

[Structured ladder]

[ST]	
PLS(X20, Var_Flag_Inst);	(* Transmission instruction pulse*)
IF (Var_Flag_Inst=TRUE) THEN MOV(TRUE, H4241, D11); MOV(TRUE, H4443, D12); MOV(TRUE, H4645, D13); MOV(TRUE, H0047, D14); MOV(TRUE, H0A0D, D15); MOV(TRUE, 1, Var ControlData[0]);	(* Sets send data *) (* Sets transmission channel to 1 *)
MOV(TRUE, 5, Var_ControlData[2]);	(* Sets number of send data to 5 words *)
G_OUTPUT(TRUE, H0, Var_ControlData, E	011, Var_Result); (* Sends data *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE MOV(TRUE, Var_ControlData[1], Var SET(TRUE, Var_Flag_Error); END_IF; END_IF;	
IF (X21=TRUE) THEN RST(TRUE, Var_Flag_Normal); RST(TRUE, Var_Flag_Error); END_IF;	(* Turns normal completion flag OFF *) (* Turns error completion flag OFF *)

5.2.3 INPUT instruction

G_INPUT



G_INPUT

				ST				indicat ructions. NPUT	es any of t	he following
- EN - Un* - s	ENO	E	NO:= G_I	NPUT (EN	, Un*, s, d1,	d2);				
Input argument	EN:	Executing	condition				:Bit			
	Un*:		Higher two	the module o digits whe	n expressing	the I/O nun	ANY: ANY:	16		
	s:	Variable th	nat stores	control data			:Arra	y of ANY16 [03]		
Output argument	ENO:	Execution					:Bit			
	d1: d2:	Variable th	nat turns C	N upon cor	stores read on npletion of the of error comp	e instructio	:ANY n :Arra	′16 y of bit [01]		
		Setting	Interna	l device	R, ZR	J]\]	U∭\G∭	Zn	Constant Others
		data ^{*1}	Bit	Word		Bit	Word	0		
		S	-	(С			-		
		d1	-	(C			-		

Function

This instruction receives data in the message format specified by the user using the nonprocedural protocol.

Device	Item	Setting data	Setting range	Setting side
© [0]	Reception channel	Set the reception channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
<u></u> জ[1]	Reception result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
\$[2]	Number of receive data	The number of receive data are stored.	0 or more	System
<u></u> জ[3]	Allowable number of words for receive data	Set the allowable number of words for receive data to be stored in ④.	1 or more	User

Program Example

The following program stores data which are received using the nonprocedural protocol in the devices starting from D10.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

XЗ MOVP Sets receive ΕN ENO channel to 1 s d /ar_ControlData[0] $\times 4$ Sets allowable number MOVP ΕN ENO of words for receive data - || · ||to 10 words 10 /ar_ControlData[3] S d Receives data G_INPUT ΕN ENO H00 Un* d1 -D10 Var_ControlData d2 √ar_Result s Var_Result[0] 2 Var_Result[1] Stores receive data MOV ΕN ENO · ŀ 1 Var_ControlData[2] 72 s d **BMOV** ΕN ENO D10 -D110 S d K0Z2 n Var_Result[1] Turns error completion SET ΕN ENO flag ON Flag Error d Turns error completion 3 ×100 RST ΕN ENO -| · | flag OFF d /ar_Flag_Error

[Structured ladder]

```
[ST]
IF((X3=TRUE) OR (X4=TRUE))THEN
    MOVP(TRUE, 1, Var_ControlData[0]);
                                              (* Sets receive channel to 1 *)
    MOVP(TRUE, 10, Var_ControlData[3]);
                      (* Sets allowable number of words for receive data to 10 words *)
    G_INPUT(TRUE, H0, Var_ControlData, D10, Var_Result);
                                                    (* Receives data *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                                    (* Execution finished *)
                                                    (* Normal completion *)
    IF(Var Result[1]=FALSE)THEN
          MOV(TRUE, Var_ControlData[2], Z2);
          BMOV(TRUE, D10, K0Z2, D110);
                                                    (* Stores receive data *)
    ELSE
                                                    (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                                    (* Turns error completion flag ON *)
    END_IF;
END IF;
IF(X100=TRUE)THEN
                                              (* Turns error completion flag OFF *)
    RST(TRUE, Var_Flag_Error);
END_IF;
```

```
AODULE DEDICATED
```

5.2.4 BIDOUT instruction

Sirial Modem G(P)_BIDOUT P: Executing condition : 🕈 indicates any of the following instructions. **Structured ladder** ST G_BIDOUT G_BIDOUT GP_BIDOUT ΕN ENO ENO:= G_BIDOUT (EN ,Un* ,s1 ,s2 ,d); Un' d s1 s2 :Bit Input argument EN: Executing condition Un*: :ANY16 Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Variable that stores control data :Array of ANY16 [0..2] :ANY16 s2: Start number of the device that stores write data :Bit Output argument ENO: Execution result Variable that turns ON upon completion of the instruction :Array of bit [0..1] d: d[1] also turns ON at the time of error completion. Setting Internal device Others R, ZR U....\G.... Zn Constant data *1 Bit Word Word Ri (s1) \bigcirc _ (s2) _

*1: Local devices and file registers per program cannot be used as setting data.

G_BIDOUT

Grant Function

This instruction sends data using the bidirectional protocol.



Device	Item	Setting data	Setting range	Setting side
st) [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
ৱা[1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends desired data stored in devices from D11 to D15 using the bidirectional protocol.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder]

1	·X20 ····· PLS I · I EN ENO ····· d	Transmission instruction pulse
2		
	· · · · · · · · · · · · · · · · · · · · · · · ·	
	EN ENO HOAD s d D15 · · · ·	
	· · · · · · · · · · · · · · · · · · · · · · · ·	Sets transmission channel to 1
		Sets number of send data to 5 words
	G_BIDOUT EN ENO Un* d Var_ControlData s1 s2	Sends data
3	Var_Result[0] Var_Result[1] SET I I I I I I I I I	Turns normal completion flag ON
	Var_Result[1] MOV EN EN Var_ControlData[1] s d Var_ErrorCode	Stores error code
	EN ENO d	Turns error completion flag ON
4	· X21 · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag OFF
	EN ENO d Var_Flag_Error	Turns error completion flag OFF

[ST] PLS(X20, Var_Flag_Inst); (* Transmission instruction pulse *) IF(Var_Flag_Inst=TRUE)THEN (* Sets send data *) MOV(TRUE, H4241, D11); MOV(TRUE, H4443, D12); MOV(TRUE, H4645, D13); MOV(TRUE, H0047, D14); MOV(TRUE, H0A0D, D15); MOV(TRUE, 1, Var_ControlData[0]); (* Sets transmission channel to 1 *) MOV(TRUE, 5, Var ControlData[2]); (* Sets allowable number of words for send data to 5 words *) G_BIDOUT(TRUE, H0, Var_ControlData, D11, Var_Result); (* Sends data *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) (* Turns error completion flag ON *) SET(TRUE, Var_Flag_Error); END IF; END_IF; IF(X21=TRUE)THEN RST(TRUE, Var_Flag_Normal); (* Turns normal completion flag OFF *) RST(TRUE, Var_Flag_Error); (* Turns error completion flag OFF *) END_IF;

G_BIDIN

5.2.5 BIDIN instruction

				Sirial Moo
G(P)_BIDIN				P: Executing condition : 🛧
Structure G_BIC EN Un*		ENO:=	ST G_BIDIN (EN, Un*, s, d1, d2);	instructions. G_BIDIN GP_BIDIN
Input argument	d2 EN: Un*:	Executing conditi		:Bit :ANY16
		(00 to FE: Higher three digits)	two digits when expressing the I/0) number in
Output argument	s: ENO: d1: d2:	Variable that turn	es control data ne device that stores read data s ON upon completion of the insti N at the time of error completion	
		Setting Inter data ^{*1} Bit	nal device R, ZR	JIII\III UIII\GIII Zn Constant C
	1	s –	0	-
		(d1) –	0	-
		d2 O	0	_

Grantion

This instruction receives data using the bidirectional protocol.

5

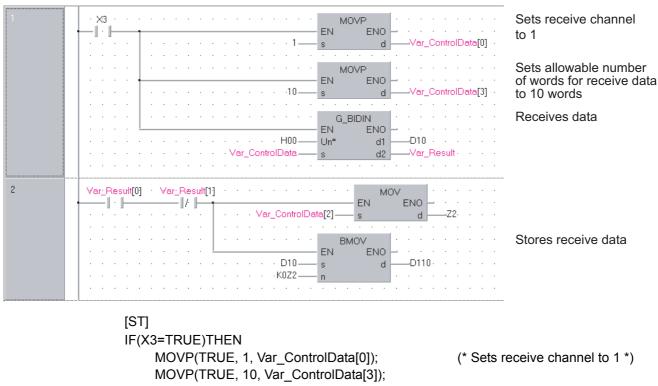
Device	Item	Setting data	Setting range	Setting side
s [0]	Reception channel	Set the reception channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
ি [1]	Reception result	The instruction completion status is stored. 0: Normal	-	System
⑤ [2]	Number of receive data	The number of received data are stored.	1 or more	System
<u></u> জ[3]	Allowable number of words for receive data	Set the allowable number of words for receive data to be stored in ④.	1 or more	User

Program Example

[Structured ladder]

The following program receives data using the bidirectional protocol and stores the data in the devices starting from D10.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)



MOVP(TRUE, 10, Var_ControlData[3]); (* Sets allowable number of words for receive data to 10 *)

G_BIDIN(TRUE, H0, Var_ControlData, D10, Var_Result);

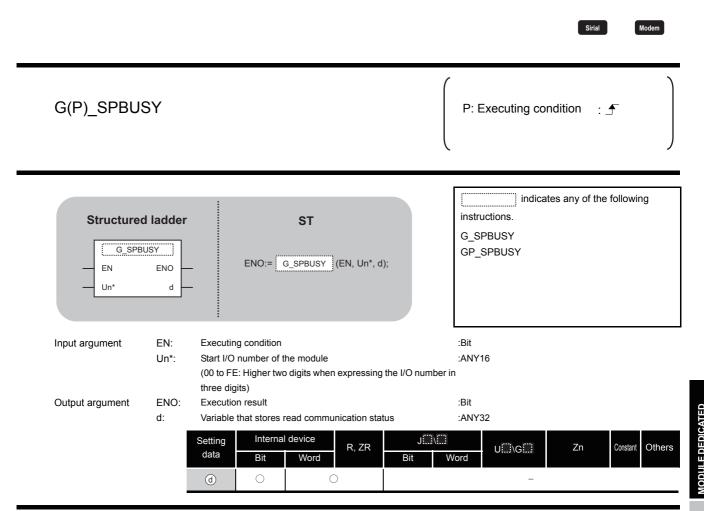
(* Receives data *)

END_IF;

IF((Var_Result[0]=TRUE) & (Var_Result[1]=FALSE))THEN MOV(TRUE, Var_ControlData[2], Z2); BMOV(TRUE, D10, K0Z2, D110); (* Stores receive data *) END_IF;

G_SPBUSY

5.2.6 SPBUSY instruction



Function

This instruction reads the data transmission/reception status.

Program Example

The following program reads out the communication status of the target module.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder]

1	Var_Flag E I Hoo I Hoo I I	
	[ST]	

GP_SPBUSY(Var_Flag, H0, D0); (* Reads communication status *)

G_SPBUSY

5.2.7 CSET instruction (receive data clear)

Modem Sirial **ZP_CSET** Executing condition : 🕈 indicates the following instruction. **Structured ladder** ST ZP_CSET ZP CSET ΕN ENO ENO:= ZP_CSET (EN, Un*, s1, s2, d1, d2); Un' d1 d2 s1 s2 :Bit Input argument EN: Executing condition Un*: :String Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three diaits) s1: Channel number that requests receive data clear :ANY16 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side) s2: Variable that stores control data :Array of ANY16 [0..111] Output argument ENO: :Bit Execution result :ANY16 d1: Dummy d2: Variable that turns ON upon completion of the instruction :Array of bit [0..1] d2[1] also turns ON at the time of error completion. Setting Internal device J....\.... Constant R, ZR U....\G.... Zn Others К, Н data *1 Bit Word Word Bit \bigcirc _ \bigcirc _ _ (s2) _ \bigcirc _ _ d1) _ _

*1: Local devices and file registers per program cannot be used as setting data.

_

ZP CSET



This instruction clears receive data in the OS area.

_

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0'.	0	User
⊚[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s2 [2]	Request type	Specify the request. 4: Receive data clear request	4	User
© [3] to © [111]	For system	_	-	System

Program Example

The following program clears the receive data in the Q series C24 side.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

X20 X20 MOVP Clears execution I I EN ENO type to 0
MOVP Sets request type
····· ······ ······ ······ ······ ······ ······ Clears data
Image: Second
Var_Result[0] Var_Result[1] SET Turns normal completion Image: Set in the set in
Var_Result[1] SET Turns error completion Image: Set of the se
· · · · · · · · · · · · · · · · · · ·
• x21 • • • • • • • • • • • • • • • • • • •
RST Turns error completion EN ENO

[Structured ladder]

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE, 0, Var_ControlData[0]);
                                              (* Clears execution type to 0 *)
    MOVP(TRUE, 4, Var_ControlData[2]);
                                               (* Sets request type *)
    ZP_CSET(TRUE, "00", 1, Var_ControlData, Var_Dummy, Var_Result);
                                              (* Clears data *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                              (* Execution finished *)
                                              (* Normal completion *)
    IF(Var_Result[1]=FALSE)THEN
                                              (* Turns normal completion flag ON *)
          SET(TRUE, Var_Flag_Normal);
    ELSE
                                               (* Error completion *)
          MOV(TRUE, Var_ControlData[1], Var_ErrorCode);
                                              (* Stores error code *)
          SET(TRUE, Var_Flag_Error);
                                              (* Turns error completion flag ON *)
    END_IF;
END_IF;
IF(X21=TRUE)THEN
    RST(TRUE, Var_Flag_Normal);
                                              (* Turns normal completion flag OFF *)
                                              (* Turns error completion flag OFF *)
    RST(TRUE, Var_Flag_Error);
END_IF;
```

5.2.8 BUFRCVS instruction

Z_BUFRCVS



Z_BUFRCVS

								indica	tes the follo	wing instr	ructio
Structure	d ladder			ST			Z.	_BUFRCVS			
Z_BUF	RCVS										
— EN	ENO		FNO:= 7	BUERCVS	(EN, Un*, s,	d).					
	d				(,,, , _,	-,,					
Input orgument	EN:	Executing	a condition				:Bit				
Input argument	Un*:	-		he module			:Strin	0			
		(00 to FE		o digits whe	n expressing	the I/O	.oum	9			
	S:	1: Chann	n channel r el 1 (CH1 s el 2 (CH2 s	side)			:ANY	16			
Output argument	ENO:	Execution	-	<i>(100)</i>			:Bit				
	d:		e data are r		stores read o e receive are		:ANY	16			
		Setting data ^{*1}	Interna Bit	l device Word	R, ZR	J Bit]∖∭ Word	UIII\GIII	Zn	Constant K, H	Oth
	- I	S	-	(\supset			-		0	-
		d	0	()			-		-	-
	-			1	*1: Loca	al devices a	nd file reg	gisters per program	cannot be u	ised as set	ting

☆ Function

This instruction receives data with an interrupt program during communication using the nonprocedural protocol or bidirectional protocol.

Receive Data

Device	Item	Setting data	Setting range	Setting side
(d) +0	Receive data length	The number of data read from the number of receive	0 or more	System
@+U		data storage area is stored.	o or more	Oystern
(d)+1				
to	Receive data	Data read from the receive data storage area are	-	System
(d) + n		stored in ascending address order.		
W III				

Program Example

The following program receives data with an interrupt program.

	[Structured ladder]	
1	DX3 · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
2	DX4 · · · · · · · · · · · · · · · · · · ·	Turns error completion flag ON
3	SM400 SM400 <td< td=""><td>Executes interrupt receive program</td></td<>	Executes interrupt receive program

[ST]

(* Set the normal/error confirmation flag for the main program *)
(* The main program resets flags *)
SET(DX3, Var_Flag_Normal);
SET(DX4, Var_Flag_Error);
(* Turns error completion flag ON *)

(* Receives data from CH1 and stores the data in devices starting from D200 *) Z_BUFRCVS(SM400, "00", 1, D200); (* Executes interrupt receive program *)

G_PRR

5.2.9 PRR instruction

G(P)_PRR			P: Executing condition :
o(: <u>)_</u>			
			indicates any of the following
Structure		ST	instructions. G_PRR
— EN — Un* — s	ENO d	ENO:= (EN, Un*, s, d);	GP_PRR
Input argument	EN:	Executing condition	:Bit
	Un*:	Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number	:ANY16 in
	e.	three digits)	Array of ANY16 [0, 4]
Output argument	s: ENO:	three digits) Variable that stores control data Execution result	:Array of ANY16 [04] :Bit
Output argument		Variable that stores control data	
Output argument	ENO:	Variable that stores control data Execution result Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:Bit :Array of bit [01]
Output argument	ENO:	Variable that stores control data Execution result Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:Bit :Array of bit [01] U∭\G∭ Zn Constant O

*1: Local devices and file registers per program cannot be used as setting data.

This instruction sends data by user frame according to the specification in user frame specification area for transmission during communication using the nonprocedural protocol.

E DEDICATED

Device	Item	Setting data	Setting range	Setting side
		Set the transmission channel.		
⑤ [0]	Transmission channel	1: Channel 1 (CH1 side)	1, 2	User
		2: Channel 2 (CH2 side)		
		The instruction completion status is stored.		
⑤ [1]	Transmission result	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
		Specify whether to add CR/LF codes to the send data.		
S [2]	CR/LF addition specification	0: CR/LF not added	0, 1	User
		1: CR/LF added		
		Specify the position in the user frame specification		
⑤ [3]	Transmission pointer	area for transmission from where the frame number	1 to 100	User
		data are to be sent.		
⑤ [4]	Number of send data	Set the number of user frames to be sent.	1 to 100	User

Program Example

The following program sends desired data and the user frames from number 1 to number 5 which are registered in the transmission frame setting.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder]

Image: Second	Transmission instruction pulse
2 Ver_Flag_Inst -X3E_X3F I I I I I I I I I I I I I I I I I I I	Sets number of send data
H1234 s d Var_TransData[1]·	Sets desired send data
H56AB S d Var_TransDate[2]·	Sets send data
	to buffer memory
H3F2-s_ds_ds_d	User frame 0
H3F3 s d Ver_Frame[1]	User frame 1
EN MOV EN ENO s d Var_Frame[2]	User frame 2
H8000 s d Var_Frame[3]	User frame 3
H41B s d	User frame 4
EN ENO s d Var_Frame[5]	User frame 5
Var_Frame[0] TO • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •	Sets user frames to buffer memory
3 Var_Flag_Inst · · · · · · · · · · · · · · · · · · ·	Sets transmission channel to 1
EN ENO s d	Clears transmission result
H0 H0 K0 Var_ControlData[2]	Sets CR/LF to 'CR/LF not added'
H1— s d Var_ControlData[3]	Sets transmission pointer
H5 H5 H5 H7 H5 H7	Sets number of send data
GP_PRR EN ENO Un* d Var_ControlData s	Performs user frame transmission
4 Var_Result[0] · Var_Result[1] · · · · · EN EN d - Var_Flag_Normal ·	Turns normal completion flag ON
Var_Result[1] SET EN EN d Var_Flag_Error	Turns error completion flag ON

[ST] PLS(X50, Var_Flag_Inst);	(* Transmission instruction pulse *)
IF((Var_Flag_Inst=TRUE) & (X9E=TRUE) & (X9 MOV(TRUE, 4, Var_TransData[0]); MOV(TRUE, H1234, Var_TransData[1]); MOV(TRUE, H56AB, Var_TransData[2]); TO(TRUE, H400, Var_TransData[0], 3); MOV(TRUE, H3F2, Var_Frame[0]);	F=FALSE))THEN (* Sets number of send data *) (* Sets desired send data *) (* Sets send data to buffer memory *) (* Sets user frame 0 *)
MOV(TRUE, H3F3, Var_Frame[1]); MOV(TRUE, H8001,Var_Frame[2]); MOV(TRUE, H8000,Var_Frame[3]); MOV(TRUE, H41B, Var_Frame[4]); MOV(TRUE, 0, Var_Frame[4]); TO(TRUE, HBA, Var_Frame[0], 6); END_IF;	 (* Sets user frame 1 *) (* Sets user frame 2 *) (* Sets user frame 3 *) (* Sets user frame 4 *) (* Sets user frame 5 *) (* Sets user frames to buffer memory *)
IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 1, Var_ControlData[0]); MOV(TRUE, 0, Var_ControlData[1]); MOV(TRUE, H0, Var_ControlData[2]); MOV(TRUE, H1, Var_ControlData[3]); MOV(TRUE, H5, Var_ControlData[4]); GP_PRR(TRUE, H08, Var_ControlData, Var_Contr	(* Sets transmission channel to 1 *) (* Clears transmission result *) (* Sets CR/LF to 'CR/LF not added' *) (* Sets transmission pointer *) (* Sets number of send data *) ar_Result); (* Performs user frame transmission *)
END_IF; IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE SET(TRUE, Var_Flag_Error); END_IF;	(* Execution finished *) (* Normal completion *) (* Turns normal completion flag ON *) (* Error completion *) (* Turns error completion flag ON *)

END_IF;

ZP_CSET

5.2.10 CSET instruction (initial setting)

				Sir	rial Moo
ZP_CSET				Executing condition	: 🕈
Structure EN Un* s1 s2		ENO:=ZP_	ST <u>CSET</u> (EN, Un*, s1, s2, d1, d2);	ZP_CSET	owing instruc
	EN:	Executing condition	n	:Bit	
Input argument	LIN.	Excounting contained		.Dit	
Input argument	Un*:	Start I/O number of (00 to FE: Higher to		:String	
Input argument		Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1	f the module wo digits when expressing the I/O nur I number side)	:String	
Input argument	Un*:	Start I/O number of (00 to FE: Higher to three digits) Reception channel	f the module wo digits when expressing the I/O nur I number side) 2 side)	:String mber in	
Output argument	Un*: s1:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2	f the module wo digits when expressing the I/O nur I number side) 2 side)	:String mber in :ANY16	
	Un*: s1: s2:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2 Variable that stores	f the module wo digits when expressing the I/O nur I number side) 2 side)	:String mber in :ANY16 :Array of ANY16 [0111]	
	Un*: s1: s2: ENO:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2 Variable that stores Execution result Dummy Variable that turns	f the module wo digits when expressing the I/O nur I number side) 2 side)	:String mber in :ANY16 :Array of ANY16 [0111] :Bit :ANY16	
	Un*: s1: s2: ENO: d1:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2 Variable that stores Execution result Dummy Variable that turns d2[1] also turns ON Setting	f the module wo digits when expressing the I/O nur I number side) 2 side) 5 control data ON upon completion of the instructio N at the time of error completion.	:String mber in :ANY16 :Array of ANY16 [0111] :Bit :ANY16 on :Array of bit [01]	Constant K, H
	Un*: s1: s2: ENO: d1:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2 Variable that stores Execution result Dummy Variable that turns d2[1] also turns ON	f the module wo digits when expressing the I/O nur I number side) 2 side) 3 control data ON upon completion of the instruction N at the time of error completion.	:String mber in :ANY16 :Array of ANY16 [0111] :Bit :ANY16 on :Array of bit [01]	
	Un*: s1: s2: ENO: d1:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2 Variable that stores Execution result Dummy Variable that turns d2[1] also turns ON Setting data *1 Bit	f the module wo digits when expressing the I/O nur I number side) 2 side) s control data ON upon completion of the instruction N at the time of error completion. nal device R, ZR Ji Bit	:String mber in :ANY16 :Array of ANY16 [0111] :Bit :ANY16 on :Array of bit [01]	К, Н
	Un*: s1: s2: ENO: d1:	Start I/O number of (00 to FE: Higher to three digits) Reception channel 1: Channel 1 (CH1 2: Channel 2 (CH2 Variable that stores Execution result Dummy Variable that turns d2[1] also turns ON Setting data *1 Bit (1)	f the module wo digits when expressing the I/O nur I number side) 2 side) 3 s control data ON upon completion of the instruction N at the time of error completion. Nat the time of error completion.	String mber in ANY16 Array of ANY16 [0111] Bit ANY16 on Array of bit [01] Mord Zn	К, Н

Grant Function

This instruction changes the setting values for sending/receiving data using communication protocols.

5-85

LE DEDICATED UCTION **G**

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0'.	0	User
@[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
@[2]	Request type	Specify the request. 1: Change of unit (word/byte) and buffer memory assignment	1	User
€2[3]	Word/byte unit specification	Specify the unit of the number of send/receive data. 0: Current setting value 1: In units of words 2: In units of bits	0,1,2	User
⊚[4]	Buffer memory start address for on- demand function	Specify the start address of the buffer memory used by the on-demand function 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1АFFн, 2600н to 3FFFн	User
፼[5]	Buffer memory size for on-demand function	Specify the size (the number of words) of the buffer memory to be used by the on-demand function. 0н: Current setting value is used. 1н to 1A00н: Size	0н, 1н to 1А00н	User
€2[6]	Send area start address	Specify the start address of the send area used for the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1AFFн, 2600н to 3FFFн	User
@[7]	Send area size	Specify the size (the number of words) of the send area used by the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 1н to 1A00н: Size * The start area of the send area (1 word) is used for the number of send data specification area.	0н, 1н to 1А00н	User
€2[8]	Receive area start address	Specify the start address of the receive area used for the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1AFFн, 2600н to 3FFFн	User
@ [9]	Receive area size	Specify the size (the number of words) of the receive area used for the nonprocedural/bidirectional protocol. Он: Current setting value is used. 1н to 1A00н: Size * The start area of the receive area (1 word) is used for the number of receive data storage area.	0н, 1н to 1А00н	User
 2 [10] to 2 [111] 	For system	_	_	System

Program Example

The following program changes the send buffer area of the CH1 side interface.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

- Sets send buffer to C00H to FFFH.
- Sets receive buffer to 600H to 7FFH.

[Structured ladder]

1	Var_Flag_Inst FMOVP Image: Inst EN Image: Inst Image: Inst Image: Inst Image: Image: Inst Image: Image: Inst Image: Image	Clears D0 to D111 to 0
		Sets execution type
	MOVP EN S d Var_ControlData[2]	Sets request type
	MOVP EN EN ENO s d Var_ControlData[3]	Sets word/byte unit to word
	MOVP EN ENO s dControlData[4]	Sets on-demand start address
	MOVP EN ENO s dControlData[5]	Sets on-demand buffer size
	H0C00 s d Var_ControlData[6]	Sets send buffer start address
	H400 S d Var_ControlData[7]	Sets send buffer size
	H600 B d Var_ControlData[8]	Sets receive buffer start address
	H200 MOVP H200 S H200 S	Sets receive buffer size
	· · · · · · · · · · · · · · · · · · ·	Performs initialization
2	Var_Result[0] Var_Result[1] SET Image: Set in the second	Turns normal completion flag ON
	Var_Result[1] SET EN ENO d Var_Flag_Error	Turns error completion flag ON

5-87

5

MOVP(TRUE, H600, Var_ControlData[8]); MOVP(TRUE, H200, Var_ControlData[9]); ZP_CSET(TRUE, "00", 1, Var_ControlData,	<pre>(* Sets execution type *) (* Sets request type *) (* Sets word/byte unit to word *) (* Sets on-demand start address *) (* Sets on-demand buffer size *) (* Sets send buffer start address *) (* Sets send buffer size *) (* Sets receive buffer start address *) (* Sets receive buffer start address *) (* Sets receive buffer start address *)</pre>
END_IF; IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE SET(TRUE, Var_Flag_Error); END_IF; END_IF;	(* Execution finished *) (* Normal completion *) (* Turns normal completion flag ON *) (* Error completion *) (* Turns error completion flag ON *)

ZP_CSET

5.2.11 CSET instruction (programmable controller CPU monitor)

					Sirial Mod
ZP_CSET					Executing condition : _
Structure EN Un* s1 s2		- E	NO:= ZP_CSI	ST (EN, Un*, s1, s2, d	ZP_CSET
Input argument	EN:		g condition		:Bit
	Un*: s1:	(00 to FE three dig		ligits when expressing	:String the I/O number in :ANY16
	51.	1: Chanr	nel 1 (CH1 sic nel 2 (CH2 sic	e)	
	s2:		that stores co		:Array of ANY16 [0111]
Output argument	ENO:	Executio	n result		:Bit
	d1:	Dummy			:ANY16
	d2:			upon completion of the time of error com	
		Setting data ^{*1}	Internal o	R, ZR	JIIVII UIIIVGII Zn Constant Rit Word UIIIVGIII Zn K, H
		(s1)	Bit –	Word	Bit Word K, H
	1	62	_	0	
				0	
	Ī	đ	-	0	

This instruction registers and cancels the programmable controller CPU monitoring.

5-89

(1)	Registering the	programmable controller	CPU monitoring
-----	-----------------	-------------------------	----------------

Device		Item	Setting data	Setting range	Setting side
s2 [0]	Ex	ecution type	Specify '0'.	0	User
©[1]	Completion status		The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s2 [2]	Re	quest type	Specify the request. 2: Registration of programmable controller CPU monitoring	2	User
s2 [3]	Су	cle time unit	Specify the unit of cycle time. 0: 100ms 1: Second 2: Minute	0 to 2	User
©[4]	Су	cle time	Specify the cycle time. 1н to FFFFн: Cycle time	1н to FFFFн	User
€2 [5]		ogrammable controller CPU monitoring ction	Specify the monitoring function. 1: Constant cycle transmission 2: Condition agreement transmission	1,2	User
€2[6]	Programmable controller CPU monitoring transmission method		Specify the transmission method. 0: Data transmission (device data, CPU error information) 1: Notification	0,1	User
፼[7]		User frame output start pointer	Specify the start pointer of the table to which the user frame number for constant cycle transmission is set. 0 : No specification (at condition agreement transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User
€2 [8]	Constant cycle transmission	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for constant cycle transmission. 0 : No specification (at condition agreement transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
@[9]	Constant c	Modem connection data No.	Specify the data number for modem function connection when making notification in constant cycle transmission. 0 : No specification (at data transmission and condition agreement transmission) BB8н to BD5н : Connection data number (flash ROM) 8001н to 801Fн: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User
s2 [10]	Number of registered word blocks		Specify the number of blocks of the word device to be monitored.	0 to 10	User
@[11]	Nu	mber of registered bit blocks	Specify the number of blocks of the bit device to be monitored.	0 to 10	User
⊚[12]	Programmable controller CPU error monitoring (programmable controller CPU status monitoring)		Specify whether to also execute programmable controller CPU error monitoring. 0: Not monitored 1: Monitored	0,1	User

Device			Item	Setting data	Setting range	Setting side
@[13]			vice code	Specify the code of the device to be monitored. 0 : No device monitored Other than 0 : Device code	90н to CCн (Device code)	User
© [14] © [15]		Мо	nitoring start device	Specify the start number of the monitoring device in this block.	0 or more	User
€2 [16]	1	Number of registered points		Specify the number of registered points (read points) of this block. 0 : No device monitored 1 or more : Number of registered points * For a bit device, specify the number of points in units of words.	0, 1 or more	User
ଛ2 [17]			Monitoring condition	Specify the monitoring condition of this block. 0 : No specification (at constant cycle transmission) 1 or more : Monitoring condition	0 to 65535	User
፼[18]	Programmable controller CPU monitoring setting 1st * 1st block * 1st block		Monitoring condition value	Specify the monitoring condition value for this block. 0 or more: Monitoring condition * Specify '0' at constant cycle transmission.	0 to 000Ан, 0101н to 010Ан	User
⊚[19]		ansmission	User frame output start pointer	Specify the start pointer of the table to which the user frame number for condition agreement transmission for this block is set. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User
@[20]		Condition agreement tr	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for condition agreement transmission for this block. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
⊚[21]			Modem connection data No.	Specify the data number for modem function connection when making notification in condition agreement transmission for this block. 0 : No specification (at data transmission and constant cycle transmission) BB8H to BD5H : Connection data number (flash ROM) 8001H to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User
© [22] to © [102]	Programmable controller CPU monitoring setting 2nd to 10th * 2nd to 10th blo) DCk		The same item arrangement as the first programmable controller CPU monitoring setting item.	_	User

5-91

Device			Item	Setting data	Setting range	Setting side
© [103]					1	
s2 [104]	İ				0	
⊚ [105]	†				0	User
s2 [106]			Fixed value	Specify a fixed value to monitor the CPU status.	1	
© [107]	+				5	
© [108]					1	
@[109]	CPU status monitoring setting * Error monitoring 11th * 11th block	t transmission	User frame output start pointer	Specify the start pointer of the to which the user frame number for condition agreement transmission for this block is set. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User
@[110]		Condition agreemen	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for condition agreement transmission for this block. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
@[111]	•		Modem connection data No.	Specify the data number for modem function connection when making notification in condition agreement transmission for this block. 0 : No specification (at data transmission and constant cycle transmission) BB8H to BD5H : Connection data number (flash ROM) 8001H to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User

(2) Cancelling the programmable controller CPU monitoring

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0н'.	0	User
፼[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
⊚[2]	Request type	Specify the request. 3: Cancel of the programmable controller CPU monitoring	3	User
© [3] to © [111]	For system	-	-	System

Program Example

Program to register the programmable controller CPU monitoring
 The following program registers the programmable controller CPU monitoring and sends the
 monitoring result from the CH1 side interface.
 The following setting is to send contents of devices from M0 to M15 and devices from D100
 to D100 to the external device through the constant evels transmission. (Cycle time: 3)

to D109 to the external device through the constant cycle transmission. (Cycle time: 3 minutes)

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

1	·X24 PLS I EN I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I <t< th=""><th>Instruction pulse</th></t<>	Instruction pulse
2	Var_Flag_Inst Var_Flag_Normal MOVP Image: Normal Image: Normal Image: Normal Image: Normal<	Sets execution type
	MOVP MOVP EN ENO Var_ControlData[2]	Sets request type
	EN ENO 	Sets cycle time unit to minute
	MOVP MOVP EN ENO Var_ControlData[4]	Sets cycle time to 3 minutes
	MOVP MOVP EN ENO Var_ControlData[5]	Sets programmable controller CPU monitoring function to constant cycle transmission
	MOVP EN ENO	Sets transmission method to data transmission
	MOVP MOVP EN ENO Var_ControlData[7]	Sets output start pointer
	EN ENO 	Sets number of user frame transmissions
	EN ENOVar_Flag_Sat	Turns data set flag ON

[Structured ladder]

ZP_CSET

continued on the next page

3	Var_Flag_Set · · · · · · · · · · · · MOVP	Poto number of registered
5		Sets number of registered word blocks
	 	
	MOVP	Sets number of registered bit blocks
	Var_ControlData[11]	Dit Diock3
	MOVP	Sets device code
	EN ENO	
	MOVP	Sets start number of monitoring device
	Var_ControlData[14]	
	EN ENO	
	· · · · · · · · · · · · · · · · · ·	
	MOVP	Sets number of registered points
	· · · · · · · · · · · · · · · · · · ·	points
	MOVP	Sets device code
	EN ENO	
	· · · · · · · · · · · · · · · · · ·	
	MOVP	Sets start number of monitoring device
	d d d	monitoring device
	MOVP	
	EN ENO - · · · · · · · ·	
	□ · · · · · · □ · · · · · · · · · · · ·	
	MOVP	Sets number of registered points (For bit device, specify it in units
	Var_ControlData[25]	of words)
		Turns execution flag ON
	EN ENO	
	d	
	Image: State of the s	Turns data set flag OFF
	······································	
4		Registers programmable
	EN ENO - · · · · · · · · · · · · · · · · · ·	controller CPU monitoring
	· · · · · · · · · · · · · · · · · · ·	
5	Var_Result[0] · Var_Result[1] · · · · · · · · SET · · · · · · · · · · · · · · · · · · ·	Turns normal completion
	d —Var_Flag_Normal····	flag ON
	····· Var_Result[1] · · · · · · · · SET	Turns error completion
		flag ON
	RST EN ENO	Turns execution flag OFF
	dVar_Flag_Exe · · · ·	

[ST] PLS(X24, Var_Flag_Inst); (* Instruction pulse *) IF((Var_Flag_Inst=TRUE) & (Var_Flag_Normal=FALSE))THEN MOV(TRUE, 0, Var ControlData[0]); (* Sets execution type *) MOV(TRUE, 2, Var_ControlData[2]); (* Sets request type *) MOV(TRUE, 2, Var_ControlData[3]); (* Sets cycle time unit to minute *) MOV(TRUE, 3, Var ControlData[4]); (* Sets cycle time to 3 minutes *) MOV(TRUE, 1, Var_ControlData[5]); (* Sets programmable controller CPU monitoring function to constant cycle transmission. *) MOV(TRUE, 0, Var_ControlData[6]); (* Sets transmission method to data transmission *) MOV(TRUE, 1, Var ControlData[7]); (* Sets output start pointer *) MOV(TRUE, 2, Var_ControlData[8]); (* Sets number of user frame transmissions *) SET(TRUE, Var Flag Set); (* Turns data set flag ON *) END IF; IF(Var_Flag_Set=TRUE)THEN MOV(TRUE, 1, Var_ControlData[10]);(* Sets number of registered word blocks *) MOV(TRUE, 1, Var_ControlData[11]);(* Sets number of registered bit blocks *) (* Sets the 1st block of the CPU monitoring to D100 to D109 *) MOV(TRUE, H0A8, Var ControlData[13]); (* Sets device code *) MOV(TRUE, 100, Var_ControlData[14]);(* Sets start number of monitoring device *) MOV(TRUE, 0, Var_ControlData[15]); MOV(TRUE, 10, Var_ControlData[16]); (* Sets number of registered points *) (* Sets the 2nd block of the CPU monitoring to M0 to M15 *) (* Sets device code *) MOV(TRUE, H90, Var_ControlData[22]); MOV(TRUE, 0, Var_ControlData[23]);(* Sets start number of monitoring device *) MOV(TRUE, 0, Var ControlData[24]); MOV(TRUE, 1, Var_ControlData[25]); (* Sets number of registered points. (For bit device, specify it in units of words.) *) SET(TRUE, Var Flag Exe); (* Turns execution flag ON *) RST(TRUE, Var_Flag_Set); (* Turns data set flag OFF *) IF(Var Flag Exe=TRUE)THEN ZP CSET(TRUE, "00", 1, Var ControlData, Var Dummy, Var Result); (* Registers the programmable controller CPU monitoring *) END_IF; I

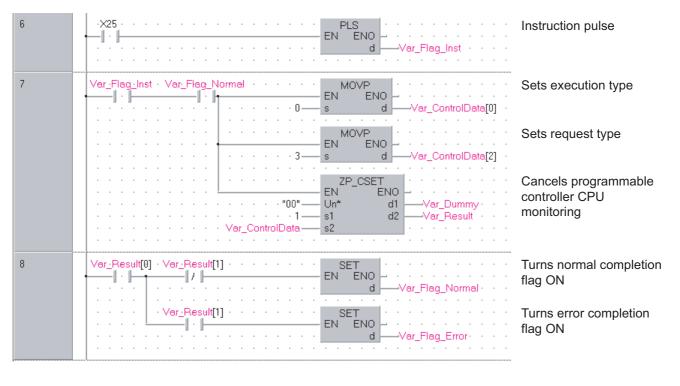
END IF;

IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE SET(TRUE, Var_Flag_Error); END_IF;	(* Execution finished *) (* Normal completion *) (* Turns normal completion flag ON *) (* Error completion *) (* Turns error completion flag ON *)
RST(TRUE, Var_Flag_Exe);	(* Turns execution flag OFF *)

END IF;

(2) Program to cancel the programmable controller CPU monitoring The following program cancels the programmable controller CPU monitoring of the CH1 side interface.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F) [Structured ladder]



[ST]

END_IF;

PLS(X25, Var_Flag_Inst); (* Instruction pulse *) IF((Var_Flag_Inst=TRUE) & (Var_Flag_Normal=TRUE))THEN MOV(TRUE, 0, Var_ControlData[0]); (* Sets execution type *) MOV(TRUE, 3, Var_ControlData[2]); (* Sets request type *) ZP CSET(TRUE, "00", 1, Var ControlData, Var Dummy, Var Result); (* Cancels programmable controller CPU monitoring *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(TRUE, Var_Flag_Normal); ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END IF;

G_PUTE

5.2.12 PUTE instruction

				Sirial Mod
G(P)_PUTE			P: Executing col	ndition : 🛧
Structured		ST ENO:= <u>G_PUTE</u> (EN, U	G_PUTE GP_PUTE	es any of the following
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when ex three digits)	:Bit :ANY16 ressing the I/O number in	
	s1:	Variable that stores control data	:Array of ANY16 [03]	
Output argument	s2: ENO:	Start number of the device that store Execution result	s read registration data :ANY16 :Bit	
Calput argument	d:	Variable that turns ON upon comple d[1] also turns ON at the time of err	ion of the instruction :Array of bit [01]	
		Setting Internal device data ^{*1} Bit Word	z, ZR J□\□ Bit Word U□\G□	Zn Constant C
		st) – O	-	
		(a) - (a) -	-	

G_PUTE

5

LE DEDICATED

This instruction registers a user frame.

Control Data

Device	Item	Setting data	Setting range	Setting side
st [0]	Registration/deletion specification	Specify whether to register the user frame of the number specified by (s) [2]. 1: Registered 3: Deleted	1, 3	User
st [1]	Registration/deletion result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Frame No.	Specify the user frame number.	1000 to 1199	User
(3]	Number of registered bytes	1 to 80: Number of bytes of the user frame to be registered. * Specify any number in the range from 1 to 80 as a dummy when '3: Deleted' is selected.	1 to 80	User

/Program Example

The following program registers a user frame as the registration number 3E8H.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

[Structured ladder]

1	·×x50 · · · · · · · · · · · · · · · · · · ·	Registration request pulse
2	Var_Flag_Inst MOV Image: Inst Image: Inst Image: Image: Inst Image: Image	Sets registration request
	H3E8 d	Sets user frame number
	MOV EN ENO s dVar_ControlData[3]	Sets number of registered bytes
	MOV EN ENO s ds d	User frame 0
		User frame 1
	EN ENO	User frame 2
	H3030 s d	User frame 3
	H4646s d Var_Frame[3] MOV EN ENO	User frame 4
	· · · · · · · · · · · · · · · · · · ·	Sets write enable in flash ROM side
	· · · · · · · · · · · · · · · · · · · · · · · · · ·	
	G_PUTE EN ENO Un* d	Registers user frame
3	Var_Result[0] Var_Frame[0] s2 Var_Result[0] Var_Result[1] s2	Turns normal completion flag ON
	····································	Turns error completion flag ON

[ST] PLS(X50, Var_Flag_Inst);	(* Registration request pulse *)
IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 1, Var_ControlData[0]); MOV(TRUE, H3E8, Var_ControlData[2]); MOV(TRUE, 10, Var_ControlData[3]); MOV(TRUE, H3946, Var_Frame[0]); MOV(TRUE, H3030, Var_Frame[1]); MOV(TRUE, H3030, Var_Frame[2]); MOV(TRUE, H4646, Var_Frame[3]); MOV(TRUE, H3030, Var_Frame[4]); TO(TRUE, H8, H2000, 1, 1); G_PUTE(TRUE, H08, Var_ControlData,Var_	(* Sets registration request *) (* Sets user frame number *) (* Sets number of registered bytes *) (* User frame 0 *) (* User frame 1 *) (* User frame 2 *) (* User frame 3 *) (* User frame 4 *) (* Sets write enable in flash ROM side *) Frame[0], Var_Result); (* Registers user frame *)
END_IF;	()
IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE SET(TRUE, Var_Flag_Error); END_IF;	(* Execution finished *) (* Normal completion *) (* Turns normal completion flag ON *) (* Error completion *) (* Turns error completion flag ON *)

END_IF;

MODULE DEDICATED INSTRUCTION

5.2.13 GETE instruction

G_GETE

G(P)_GETE P: Executing condition : : • Structured ladder ST Image: Structured ladder Structured ladder Image: Structured ladder Structured ladder					Sirial Modem
Structured ladder ST Input argument ENC:= G_GETE (EN, Un*, s1, s2, d); Input argument EN: Executing condition :Bit Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) :ANY16 s1: Variable that stores control data :Array of ANY16 [03]	G(P)_GETE				P: Executing condition : F
Un*: Start I/O number of the module :ANY16 (00 to FE: Higher two digits when expressing the I/O number in three digits) :Any16 s1: Variable that stores control data :Array of ANY16 [03]	— EN — Un* — s1		,		G_GETE
	Input argument	Un*: Start I/O numb (00 to FE: Hig three digits)	per of the module her two digits when expressing	the I/O number in	:ANY16
Output argument Execution result :Bit d: Variable that turns ON upon completion of the instruction :Array of bit [01] d[1] also turns ON at the time of error completion. :Array of bit [01]	Output argument	s2: Start number f ENO: Execution res d: Variable that t	the device that stores the read ult urns ON upon completion of th	registration data	:ANY16 :Bit
Setting data *1 Internal device Bit R, ZR JUNA UNINGE Zn Constant Constant (s) - - - - - - - -		data *1	Bit Word R, ZR		UIIIGIII Zn Constant Othe
Image: Second system - Image: Second system - <td< td=""><td></td><td></td><td>0 0</td><td></td><td>-</td></td<>			0 0		-

Grantin Function

This instruction reads a user frame.

Device	Item	Setting data	Setting range	Setting side
s1[0]	Dummy	-	0	-
st)[1]	Read result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s1[2]	Frame No. specification	Specify the user frame number.	1000 to 1199	User
ها[3]	Allowable number of bytes for read data	Specify the maximum number of bytes for storing the registered data of the read user frame to $\textcircled{2}$.	1 to 80	User
	Number of registered bytes	The number of bytes of the registered data for the read user frame is stored.	1 to 80	System

/Program Example

The following program reads out the registration data of the user frame number 3E8H.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

·×51 Read request pulse PLS ΕN ENO /ar_Flag_Inst d 2 /ar_Flag_Inst MOV ΕN ENO Ω d ar_ControlData[0] s MOV ΕN ENO H3E8 d ar_ControlData[2] s VON ΕN ENO of bytes for read data 80 ControlData[3] d s Clears user frame FMOV ΕN ENO to 0 · 0· d /ar_Frame[0] s. 40 n Reads user frame G_GETE V ENO EN · · · · · H08 Var_Result Uni d Var_ControlData s1 Var_Frame[0] s2 3 Var_Result[1] Var_Result[0] SET Turns normal ΕN ENO 17 completion flag ON /ar_Flag_Normal d Var_Result[1] Turns error ENO ·I·ŀ ΕN completion flag ON d Var_Flag_Error

[Structured ladder]

Sets user frame number Sets allowable number

G_GETE

[ST] PLS(X51, Var_Flag_Inst); (* Read request pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 0, Var_ControlData[0]); MOV(TRUE, H3E8, Var_ControlData[2]); (* Sets user frame number *) MOV(TRUE, 80, Var_ControlData[3]); (* Sets allowable number of bytes for read data *) (* Clears user frame to 0 *) FMOV(TRUE, 0, 40, Var_Frame[0]); G_PUTE(TRUE, H08, Var_ControlData, Var_Frame[0], Var_Result); (* Reads user frame *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END_IF; END_IF;

Z_UINI

5.2.14 UINI instruction

Z_UINI				Executing cond	dition :
Structured EN Un* s		ENO:=	ST	Z_UINI	the following instruc
Input argument	Un*:	Executing conditio Start I/O number o (00 to FE: Higher t three digits)		:Bit :String g the I/O number in	
Output argument	ENO: d:		s control data ON upon completion o at the time of error con		
		Setting Interr data ^{*1} Bit s –	Word R, ZR	J∏\∏ Bit Word –	Zn Constant C
	-	0 0	0		

*1: Local devices and file registers per program cannot be used as setting data.

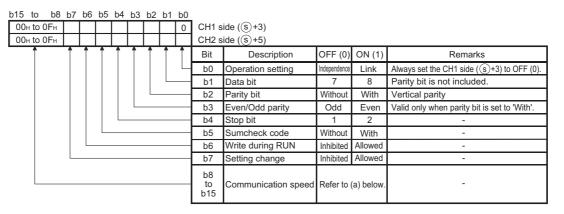
Grantin Function

This instruction switches the mode, transmission specification, and host station number of the Q series C24.

MODULE DEDICATED

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	For system	Always specify '0'.	0	User
\$[1]	Execution result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
®[2]	Execution type	 Specify the execution type. 0: Switches the execution type according to the setting in the area starting from (§ [3]. 1: Returns the execution type according to the switch setting on GX Works2. 	0, 1	
s [3]	CH1 Transmission specification setting	Set the transmission specifications for CH1. (Refer to (1).)	0 to 0FFEн	
ঙ [4]	CH1 Communication protocol setting	Set the communication protocol for CH1. (Refer to (2).)	0 to 8	User
ঙ [5]	CH2 Transmission specification setting	Set the transmission specifications for CH2. (Refer to (1).)	0 to 0FFFн	0301
\$[6]	CH2 Communication protocol setting	Set the communication protocol for CH2. (Refer to (2).)	0 to 7	
⑤ [7]	Station No. setting	Set the host station number.	0 to 31	
\$[8] to \$[12]	For system	Always specify '0'.	0	

(1) $\$ (CH1 Transmission specification setting) and $\$ (5] (CH2 Transmission specification setting) *1



(a) Communication speed

Communication	Bit position	Communication	Bit position	Remarks
speed	b15 to b8	speed	b15 to b8	
50bps	0Fн	14400bps	06н	• 230400bps is selectable only at
300bps	00н	19200bps	07н	, , , , , , , , , , , , , , , , , , , ,
600bps	01н	28800bps	08н	CH1 side (⑤[3]). (Select 300bps at
1200bps	02н	38400bps	09н	CH2 side (⑤ [5]).)
2400bps	03н	57600bps	0Ан	The sum of communication speeds selected at CH1 side and CH2 side
4800bps	04н	115200bps	0Вн	must be within 230400bps.
9600bps	05н	230400bps	0Сн	must be within 230400bps.

*1: Specify '0000H' at the CH side for which "MELSOFT connection" is specified in the communication protocol setting.

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Setting No.	Description		Remarks
0н	MELSOFT connection		Specify '0000H' for the transmission specification setting.
1н	Format 1		-
2н		Format 2	-
3н	MC protocol	Format 3	-
4н		Format 4	-
5н		Format 5	-
6н	Nonprocedural protocol		-
7н	Bidirectional protocol		-
8н	For link setting		Setting is possible only for CH1 side ($($ ^(s) [4])

Precautions

The UINI instruction is applicable to the QJ71C24N (-R2/R4) of which the function version is B and the first five digits of the serial number are '06062' or higher.

Program Example

The following program changes settings of the Q series C24 mounted on the I/O numbers X/Y0 to X/YF as follows when X20 turns ON.

		Bit				Setting
Device	Position	Specified value		Description		value
	b0	OFF		Operation setting	Independence	<u> </u>
	b1	ON		Data bit	8	1
	b2	ON	-	Parity bit	With	
	b3	OFF	CH1	Even/Odd parity	Odd	1
0 (2)	b4	OFF	Transmission	Stop bit	1	07E6H
s [3]	b5	ON	specification setting	Sumcheck code	With	072011
	b6	ON		Write during RUN	Allowed	1
	b7	ON		Setting change	Allowed	1
b8 to			Communication	19200bps	1	
	b15	-		speed	19200005	
s [4]		- CH1 Communication protocol setting Link setting		Link setting	0008H	
	b0	ON		Operation setting	Link	
	b1	ON	-	Data bit	8	1
	b2	ON	-	Parity bit	With	1
	b3	OFF	CH2	Even/Odd parity	Odd	1
	b4	OFF	Transmission	Stop bit	1	07E7H
s [5]	b5	ON	specification	Sumcheck code	With	0/2/11
	b6	ON	setting	Write during RUN	Allowed	1
	b7	ON	-	Setting change	Allowed	1
	b8 to		-	Communication	19200bps	1
	b15	-		speed	19200bps	
(3)(6)		-	CH2 Comm	unication protocol	MC protocol	0005H
s [6]			s	setting	Format 5	500011
s [7]		-	Station	No. setting	1	0001H

5

[Structured ladder]

	-
LDP ····· LDP ······ ···················	UINI instruction command
	Clears control data to 0
MOV	Sets execution type
EN ENO	
MOV	Sets CH1 transmission
EN <	specification
	Sets CH1 communication
H8 H8 - S d -Var_ControlData[4]	protocol
	Sets CH2 transmission
Image: second	specification
	Sets CH2 communication protocol
H5 s d -Var_ControlData[6]	
MOV MOV EN EN H1 s d	Sets host station number
	Switches mode
EN EN EN	Switches mode
····································	
····· ····· SET ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ······· ····· ····· <th< th=""><td>Turns interlock signal for communication stop ON</td></th<>	Turns interlock signal for communication stop ON
d Var_Flag	
2 Var_Result[0] Var_Result[1] Process on normal completion	Normal completion
	Normal completion
Ver_Result[1] · · · ·	
Process on error completion	Error completion
	Turns interlock signal for
	communication stop OFF
3 Var_Flag	
Data communication process ^{*1}	
	-

*1: Create a program so that the data communication process does not run while the interlock signal for communication stop is ON.

[ST] IF(LDP(TRUE, X20))THEN (* UNI instruction command *) IF((Y2=FALSE) (* CH1 mode switching request *) &(Y9=FALSE) (* CH2 mode switching request *) &(X6=FALSE) (* CH1 mode switching *) &(X0D=FALSE))THEN (* CH2 mode switching *) (* Runs if there is no mode switching *) FMOV(TRUE, 0, 40, Var_ControlData[0]); (* Clears control data to 0 *) MOV(TRUE, 0, Var ControlData[0]); (* Always specifies 0 *) MOV(TRUE, 0, Var_ControlData[1]); (* Resets execution result to 0 *) MOV(TRUE, 0, Var ControlData[2]); (* Sets execution type *) MOV(TRUE, H7E6, Var_ControlData[3]); (* Sets CH1 transmission specification *) MOV(TRUE,H8,Var_ControlData[4]); (* Sets CH1 communication protocol *) MOV(TRUE, H7E7, Var_ControlData[5]); (* Sets CH2 transmission specification *) MOV(TRUE, H5, Var ControlData[6]);(* Sets CH2 communication protocol *) MOV(TRUE, H1, Var_ControlData[7]); (* Sets host station number *) ZP_UINI(TRUE, "00", Var_ControlData, Var_Result); (* Switches mode *) SET(TRUE, Var Flag); (* Turns interlock signal for communication stop ON *) END IF; END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) (* Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *) END IF; RST(TRUE, Var_Flag); (* Turns interlock signal for communication stop OFF *) END IF; (* Do not perform the data communication process during interlock signal for communication stop ON *) IF(Var_Flag=FALSE)THEN

(* Data communication process	s *) ^{*1}
END IF:	

*1: Create a program so that the data communication process does not run while the interlock signal for communication stop is ON.

Z_UINI

5.3 CC-Link Instruction

5.3.1 RIRD instruction

G_RIRD

GP_RIRD			P: Executing condition :
Structured EN Un* s		ST ENO:= <u>G_RIRD</u> (EN, Un*, s, d1	d2);
Input argument	Un*: Start I/ (00 to I three c		:Bit :ANY16 the I/O number in
Output argument	ENO: Execut d1: Start n d2: Variabl	e that stores control data tion result umber of the device that stores read of the that turns ON upon completion of the lso turns ON at the time of error completion	e instruction :Array of bit [01]
	Setting data ^{*1} s	Internal device R, ZR Bit Word	JIII UIIIGIII Zn Constant Othe Bit Word
	d1	- 0	_
	d2	0 0	_

Grant Function

This instruction reads data for the specified number of points from the buffer memory of the CC-Link module or the device of the programmable controller CPU module on the specified station.

Device	Item	Setting data	Setting range	Setting side
S [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ি [1]	Station No.	Specify the station number of the local station and the intelligent device station.	0 to 64	User
s [2]	Access code, Attribute code	b15 b8b7 b0 Access code Attribute code	Refer to (1) and (2).	User
\$[3]	Buffer memory address or device No.	Specify the start address of the buffer memory or the start number of the device.	*1	User
ঙ [4]	Number of read points	Specify the number of data to be read (in units of words).	1 to 480 ^{*2} 1 to 32 ^{*3}	User

*1: For details, refer to the manual for the local station or the intelligent device station from which data are read.

When the random access buffer is specified, specify the start address of the random access buffer as 0.*2 :The value indicates the maximum number of data to be read.

Specify the value within the buffer memory capacity of the local station or the intelligent device station, or the receive buffer area setting range set by a parameter.

*3 : When reading device data from the programmable controller CPU other than the QCPU (Q mode), QCPU (A mode) or QnACPU/AnUCPU, the setting range shall be 1 to 32 words.

(1) Buffer memory of the CC-Link module

В	Access code	Attribute code		
Buffer in an i	Buffer in an intelligent device station			
	Random access buffer	20н		
	Remote input	21н	04н	
Buffer in a master or local station	Remote output	22н		
	Remote register	24н	1	
	Link special relay	63н		
	Link special register	64н		

Device	Name	Devi	ce type	Unit	Access code	Attribute code
Device	Name	Bit	Word	Onit	Access code	Allindule code
Input relay	Х	0	-	Hexadecimal	01н	
Output relay	Y	0	-	Hexadecimal	02н	-
Internal relay	М	0	-	Decimal	03н	-
Latch relay	L	0	-	Decimal	83н	-
Link relay	В	0	-	Hexadecimal	23н	-
Timer (contact)	Т	0	-	Decimal	09н	
Timer (coil)	Т	0	-	Decimal	0Ан	-
Timer (current value)	Т	-	0	Decimal	0Сн	-
Retentive timer (contact)	ST	0	-	Decimal	89н	-
Retentive timer (coil)	ST	0	-	Decimal	8Ан	-
Retentive timer (current value)	ST	-	0	Decimal	8Сн	05н
Counter (contact)	С	0	-	Decimal	11н	-
Counter (coil)	С	0	-	Decimal	12н	-
Counter (current value)	С	-	0	Decimal	14н	-
Data register	d:	-	0	Decimal	04н	-
Link register	W	-	0	Hexadecimal	24н	
File register	R	-	0	Decimal	84н	1
Special link relay	SB	0	-	Hexadecimal	63н	1
Special link register	SW	-	0	Hexadecimal	64н	1
Special relay	SM	0	-	Decimal	43н	1
Special register	SD	_	0	Decimal	44н	1

(2) Device memory of the programmable controller CPU module

 * Devices other than those listed above cannot be accessed.

When accessing a bit device, specify it with 0 or a multiple of 16.

Program Example

The following program reads out 10-word data, which start from D1000 of the number 1 local station connected to the master module mounted on the I/O numbers from X/Y40 to X/Y5F, and stores the data in the devices starting from D0 when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)

LDP ENO EΝ $\times 0$ s /ar Flag Exe SW80.0 Sets station number MOV ΕN ENO 1 $|\mathcal{F}|$ · 1 s d ar_ControlData[1] MOV Sets access code ΕN ENO and attribute code H405 d /ar_ControlData[2] s Sets device number MOV ΕN ENO $\cdot 1000$ d ar_ControlData[3] s Sets number of read MΟ\ ΕN ENO points 10 Var_ControlData[4] s d Performs readout G_RIRD ENO ΕN · H04 Un* d1 -D0 Var_ControlData d2 -Var_Result s Turns execution SET ΕN ENO flag ON d Flag Exe 2 Var_Result[0] · ÷ŀ Process on completion of receiving Var_Result[1] |F|Process on normal completion Var_Result[1] - || • || Process on error completion RST Turns execution EN **ENO** flag OFF d -Var_Flag_Exe

[Structured ladder]

G_RIRD

[ST]	
IF((LDP(TRUE, X0))	
&(Var_Flag_Exe=FALSE)	(* Execution flag *)
&(SW80.0=FALSE))THEN	(* Data link status of station number 1 *)
MOV(TRUE,1, Var_ControlData[1]);	· ,
MOV(TRUE,H0405, Var_ControlData[2]);	. ,
MOV(TRUE, 1000, Var_ControlData[3]);	· ,
MOV(TRUE, H10, Var_ControlData[4]);	,
G_RIRD(TRUE, H04, Var_ControlData, D0,	- , , , , , , , , , , , , , , , , , , ,
SET(TRUE, Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of receiving *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
·	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
RST(TRUE, Var_Flag_Exe);	(* Turns execution flag OFF *)
END_IF;	

5.3.2 RIWT instruction

G_RIWT

G(P)_RIWT					P: Executing condition : _
Structure G RI EN Un* s1 s2		ENO:= G_R	ST IWT (EN, Un*, s1, s2, d));	indicates any of the following instructions. G_RIWT GP_RIWT
lanut annum ant	EN:	Executing condition			-D/4
Input argument	EN. Un*:	Start I/O number of th (00 to FE: Higher two	e module digits when expressing the	e I/O number i	:Bit :ANY16 n
input argument		Start I/O number of th	digits when expressing the	e I/O number i	:ANY16
	Un*: s1: s2:	Start I/O number of th (00 to FE: Higher two three digits) Variable that stores co Start number of the de	digits when expressing the		:ANY16 n :Array of ANY16 [04] :ANY16
Output argument	Un*: s1:	Start I/O number of th (00 to FE: Higher two three digits) Variable that stores co Start number of the de Execution result Variable that turns ON	digits when expressing the	a nstruction	:ANY16 n :Array of ANY16 [04]
	Un*: s1: s2: ENO:	Start I/O number of th (00 to FE: Higher two three digits) Variable that stores co Start number of the de Execution result Variable that turns ON	digits when expressing the ontrol data evice that stores write data I upon completion of the in the time of error completion	a nstruction on. J∷∖	:ANY16 n :Array of ANY16 [04] :ANY16 :Bit :Array of bit [01]
	Un*: s1: s2: ENO:	Start I/O number of th (00 to FE: Higher two three digits) Variable that stores co Start number of the de Execution result Variable that turns ON d[1] also turns ON at Setting Internal of	digits when expressing the ontrol data evice that stores write data A upon completion of the in the time of error completic device R, ZR	a nstruction on. J∷∖	:ANY16 n :Array of ANY16 [04] :ANY16 :Bit :Array of bit [01]
	Un*: s1: s2: ENO:	Start I/O number of th (00 to FE: Higher two three digits) Variable that stores co Start number of the de Execution result Variable that turns ON d[1] also turns ON at the Setting data *1	digits when expressing the ontrol data evice that stores write data I upon completion of the in the time of error completion device R, ZR	a nstruction on. J∷∖	:ANY16 n :Array of ANY16 [04] :ANY16 :Bit :Array of bit [01]



This instruction writes the data for the specified number of points to the buffer memory of the CC-Link module or the device of the programmable controller CPU module on the specified station. INCTION **G**

Device	Item	Setting data	Setting range	Setting side
st) [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [1]	Station No.	Specify the station number of the local station and the intelligent device station.	0 to 64	User
s 1 [2]	Access code and attribute code	b15 b8b7 b0 Access code Attribute code	Refer to (1) and (2).	User
st [3]	Buffer memory address or device No.	Specify the start address of the buffer memory or the start number of the device.	*1	User
s1 [4]	Number of write points	Specify the number of data to be written (in units of words).	1 to 480 ^{*2} 1 to 10 ^{*3}	User

*1: For details, refer to the manual for the local station or the intelligent device station to which data are written.

When the random access buffer is specified, specify the start address of the random access buffer as 0.*2 : The value indicates the maximum number of data to be written.

Specify the value within the buffer memory capacity of the local station or the intelligent device station, or the send buffer area setting range set by a parameter.

*3 : When writing device data to the programmable controller CPU other than the QCPU (Q mode), QCPU (A mode) or QnACPU/AnUCPU, the setting range shall be 1 to 10 words.

(1) Buffer memory of the CC-Link module

Buffer	Access code	Attribute code	
В	Buffer memory		
	Random access buffer	20н	-
	Remote input	21н	1
Buffer in a master or local station	Remote output	22н	04н
Builer in a master of local station	Remote register	24н	
	Link special relay	63н	
	Link special register	64н	

Device	vice Name Device type Unit		Linit	Access code	Attribute code	
Device	Iname	Bit	Word	Onit	Access code	Allibule code
Input relay	Х	0	-	Hexadecimal	01н	
Output relay	Y	0	-	Hexadecimal	02н	-
Internal relay	М	0	-	Decimal	03н	-
Latch relay	L	0	-	Decimal	83н	-
Link relay	В	0	-	Hexadecimal	23н	
Timer (contact)	Т	0	-	Decimal	09н	-
Timer (coil)	Т	0	-	Decimal	0Ан	-
Timer (current value)	Т	-	0	Decimal	0Сн	-
Retentive timer (contact)	ST	0	-	Decimal	89н	
Retentive timer (coil)	ST	0	-	Decimal	8Ан	
Retentive timer (current value)	ST	-	0	Decimal	8Сн	05н
Counter (contact)	С	0	-	Decimal	11н	
Counter (coil)	С	0	-	Decimal	12н	
Counter (current value)	С	-	0	Decimal	14н	
Data register	D	-	0	Decimal	04н	
Link register	W	-	0	Hexadecimal	24н	
File register	R	-	0	Decimal	84н	
Special link relay	SB	0	-	Hexadecimal	63н	
Special link register	SW	-	0	Hexadecimal	64н	
Special relay	SM	0	-	Decimal	43н	1
Special register	SD	-	0	Decimal	44н	

(2) Device memory of the programmable controller CPU module

* Devices other than those listed above cannot be accessed.

When accessing a bit device, specify it with 0 or a multiple of 16.

Program Example

The following program stores 10-word data, which are stored in the devices starting from D0, to the devices starting from D1000 of the number 1 local station connected to the master module mounted on the I/O numbers from X/Y40 to X/Y5F.

(When the refresh device of the link special register (SW) is set to SW0.)

LDP EN ENO $\times 0$ s MOV Var Flag Exe - SW80.0 Sets station number ΕN ENO 17 1× · 1 s d /ar_ControlData[1] Sets access code MOV ΕN ENO and attribute code H405 s d ar_ControlData[2] Sets device number MOV ΕN ENO ·1000d /ar_ControlData[3] s Sets number of MOV ΕN ENO write points 10-/ar_ControlData[4] d s Performs writing RIWT G. EN ENO · · · · · H04 Var Result Un d Var_ControlData s1 D0-s2 Turns execution SET EN ENO flag ON d /ar_Flag_Exe 2 Var_Result[0] ł Process on completion of receiving Var_Result[1] 11 Process on normal completion Var_Result[1] d · F Process on error completion Turns execution RST ÉNO EN flag OFF -Var_Flag_Exe d

[Structured ladder]

[ST] IF((LDP(TRUE, X0))	
&(Var_Flag_Exe=FALSE)	(* Execution flag *)
&(SW80.0=FALSE))THEN	(* Data link status of station number 1 *)
MOV(TRUE, 1, Var_ControlData[1]);	
MOV(TRUE, H0405, Var_ControlData[2]);	
MOV(TRUE, 1000, Var_ControlData[3]);	(* Sets device number *)
MOV(TRUE, 10, Var_ControlData[4]);	. ,
G_RIWT(TRUE, H04, Var_ControlData, D0,	_ , ,
SET(TRUE, Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of receiving *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END IF;	
END IF;	

END_IF;

5.3.3 RIRCV instruction

G_RIRCV

G(P)_RIRC\	/					P: Executing condition :	
Structured EN Un* s1 s2		- ENO		ST (EN, Un*, s1, s2, c	d1, d2);	indicates any of the folic instructions. G_RIRCV GP_RIRCV	owing
Input argument	EN: Un*:	(00 to FE: H	umber of the Higher two dig	nodule jits when expressir	g the I/O numbe	:Bit :ANY16 r in	
Output argument	s1: s2: ENO: d1: d2:	Variable th Execution Start numb Variable th	at stores con at stores inte result er of the devi at turns ON u		the instruction	:Array of ANY16 [04] :Array of ANY16 [02] :Bit :ANY16 :Array of bit [01]	
		Setting data ^{*1}		R, ZR	J Bit	UIII\GIII Zn Cons	stant Othe
	-	s1 s2	-	0			
	Ī	d1	-	0		_	
		d2	0	0		_	

Grant Function

This instruction automatically performs handshaking with an intelligent device station and reads data from the buffer memory of the specified intelligent device station.

This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2.

Device	Item	Setting data	Setting range	Setting side
s1[0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[1]	Station No.	Specify the station number of the intelligent device station.	0 to 64	User
st [2]	Access code, Attribute code	Set '0004н'.	0004н	User
s1[3]	Buffer memory address	Specify the start address of the buffer memory.	*1	User
s1 [4]	Number of read points	Specify the number of data to be read (in units of words).	1 to 480 ^{*2}	User

- *1: For details, refer to the manual for the intelligent device station from which data are read.
- *2 : The value indicates the maximum number of data to be read.
 - Specify the value within the buffer memory capacity of the intelligent device station or the receive buffer area setting range set by a parameter.

(1) Interlock signal storage device

Device	Item	Setting data	Setting range	Setting side
0.000	b15 to b8 b7 to b0	RY: Request device	0 to 127	System
s2 [0]	0 RY	Set the high-order 8 bits to 0.	0	User
	b15 to b8 b7 to b0	RX: Completion device	0 to 127	User
s2[1]	RWr *1 RX	RWr: Error code storage device	0 to 15, FFн	User
		Set FFH when no error code storage device exists.	01013,118	USEI
		0: Completes with the contents of one device (RXn).		
	b15 to b0	1: Completes with the contents of two devices (RXn,		
s2 [2]	Completion mode	RXn + 1).	0/1	User
		(RXn + 1 turns ON upon abnormal completion of		
		the instruction.)		

*3 : The same error code as that for the completion status of control data are stored in the error code storage device.

/Program Example

The following program reads 11-word data, which are stored in buffer memory starting from the buffer memory address 400H of the number 63 intelligent device station (AJ65BT-R2(N)) connected to the master module mounted on the I/O numbers X/Y00 to X/Y1F, and stores the data in the devices starting from D40.

The interlock signal storage is set to request device: RY2, completion device: RX2, error code storage device: RWr2, and completion mode: 1.

(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder]

1	Ver_Flag_Inst Var_Flag_Exe SW83.E MOV Image: Control of the second secon	Sets station number
	63—s d —Var_ControlData[1]	
	· · · · · · · · · · · · · · · · · · ·	Sets access code and attribute code
	MOV EN ENO H400 s d	Sets buffer memory address
	MOV EN ENO s ds d	Sets number of read points
	MOV ••••••••••••••••••••••••••••••••••••	Sets request device
	H202 KOV H202 S H202	Sets completion device and error code storage area
	H1 — s d —Var_InterlockData[2]	Sets completion mode
	G_RIRCV EN ENO Un* d1 —D40 · · · · · · · · · · · · · · · · · · ·	Performs readout
2	Var_Flag_Inst · SW83.E · MEP · · · SET · · · · · · · · · · · · · · · · · · ·	Turns execution flag ON
3	Var_Result[0] Var_Result[1] Process on normal completion Var_Result[1] Process on error completion	
	EN ENO d Var_Flag_Inst	Turns read request OFF
	RST EN ENO d	Turns execution flag OFF

[ST] IF((Var_Flag_Inst=TRUE) (* Read request ON *) &(Var_Flag_Exe=FALSE) (* Execution flag *) &(SW83.E=FALSE))THEN (* Data link status of station number 63 *) (* Sets control data *) MOV(TRUE, 63, Var ControlData[1]); (* Sets station number *) MOV(TRUE,H4, Var_ControlData[2]); (* Sets access code and attribute code *) MOV(TRUE, H400, Var ControlData[3]); (* Sets buffer memory address *) MOV(TRUE, 11, Var_ControlData[4]); (* Sets number of read points *) (* Sets interlock signal storage device *) MOV(TRUE, H2, Var_InterlockData[0]); (* Sets request device *) MOV(TRUE, H202, Var_InterlockData[1]); (* Sets completion device and error code storage area *) (* Sets completion mode *) MOV(TRUE, H1, Var_InterlockData[2]); G RIRCV(TRUE, H00, Var ControlData, Var InterlockData, D40, Var Result); (* Performs readout *) END_IF; IF(MEP((Var_Flag_Inst=TRUE) & (SW83.E=FALSE)))THEN (* Read request is ON and data link status of station number 63 is OFF (rising pulse) *) SET(TRUE, Var Flag Exe); (* Turns execution flag ON *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) -----(* Process on normal completion *) (* Error completion *) ELSE (* Process on error completion *) END_IF; (* Turns read request OFF *) RST(TRUE, Var Flag Inst); RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *) END_IF;

5.3.4 RISEND instruction

G_RISEND

G(P)_RISEN	ID				P: Executing condition :
Structured EN Un* s1 s2		= =	G_RISE	ST [ND] (EN, Un*, s1, s2, d1, d2	indicates any of the following instructions. G_RISEND GP_RISEND 2);
Input argument	EN: Un*:	Executing co Start I/O nun (00 to FE: Hi three digits)	nber of t	he module o digits when expressing the	:Bit :ANY16 e I/O number in
	s1:	Variable that	t stores o	control data	:Array of ANY16 [04]
	s2:	Variable that	t stores i	nterlock signal	:Array of ANY16 [02]
Output argument	ENO:	Execution re	sult		:Bit
	d1:			device that stores write data	
	d2:			N upon completion of the in at the time of error completion	
			Internal		15.131/5.131
		data *1	Bit	R, ZR	Bit Word Zn Constant Other
		<u>s1</u>	-	0	_
		s2	-	0	_
		d1	_	0	_
		(III)		_	

Grantin Function

This instruction automatically performs handshaking with an intelligent device station and writes data to the buffer memory of the specified intelligent device station.

This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).

Device	Item	Setting data	Setting range	Setting side
s1[0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[1]	Station No.	Specify the station number of the intelligent device station.	0 to 64	User
s1 [2]	Access code, Attribute code	Set '0004н'.	0004н	User
s1 [3]	Buffer memory address	Specify the start address of the buffer memory.	*1	User
s1 [4]	Number of write points	Specify the number of data to be written (in units of words).	1 to 480 ^{*2}	User

- *1: For details, refer to the manual for the intelligent device station to which data are written.
- *2 : The value indicates the maximum number of data to be written.
 - Specify the value within the buffer memory capacity of the intelligent device station or the receive buffer area setting range set by a parameter.

(1) Interlock signal storage device

Device	Item	Setting data	Setting range	Setting side
_ 	b15 to b8 b7 to b0	RY: Request device	0 to 127	User
⊚[0]	0 RY	Set the high-order 8 bits to 0.	0	User
	b15 to b8 b7 to b0	RX: Completion device	0 to 127	User
s2 [1]	RWr *1 RX	RWr: Error code storage device	0 to 15,	User
		Set FFH when no error code storage device exists.	FFн	0361
		0: Completes with the contents of one device (RXn).		
	b15 to b0	1: Completes with the contents of two devices (RXn,		
s2 [2]	Completion mode	RXn + 1).	0/1	User
		(RXn + 1 turns ON upon abnormal completion of		
		the instruction.)		

*3 : The same error code as that for the completion status of control data are stored in the error code storage device.

/Program Example

The following program writes 1-word data of D10 to the buffer memory address 111H of the number 63 intelligent device station (AJ65BT-R2(N)) which is connected to the master module mounted on the I/O numbers from X/Y00 to X/Y1F.

The interlock signal storage settings are set to request device: RY4, completion device: RX4, error code storage device: RWr1, and completion mode: 1.

(When the refresh device of the link special register (SW) is set to SW0.)

/ar_Flaq_Inst Var_Flaq_Exe SW83.E Sets station number MOV EN ENO ł Ŧ. 63 s d /ar_ControlData[1] Sets access code MO\ ΕN ENO and attribute code H4 s d /ar_ControlData[2] Sets buffer memory MOV ΕN ENO address /ar ControlData[3] H111 S d Sets number of write MOV EN ENO points · 1 d ar_ControlData[4] S Sets request device MO EN ENO H4 /ar_InterlockData[0] d s Sets completion device МΟΛ ΕN ENO and error code storage H104 d ar_InterlockData[1] area device Sets completion mode MOV ΕN ENO H1 s d ar InterlockData[2] Sets data to be written MOV ΕN ENO to intelligent device 11 d -D10 s station Performs writing GP RISEND ΕN ENO · H00 Un* -D10 · d1 Var_ControlData s1 d2 -Var_Result Var_InterlockData s2 Var_Flag_Inst 2 SW83 E Turns execution MEP SE1 ΕN ENO EN ENO 1 flag ON d /ar_Flag_Exe 3 Var_Result[0] · Var_Result[1] Process on normal completion ł - / - t i Var_Result[1] ŀŀ Process on error completion Turns write request OFF ΕN ENO /ar_Flag_Inst d Turns execution RS¹ ENO EN flag OFF d Var_Flag_Exe

[Structured ladder]

[ST] IF((Var_Flag_Inst=TRUE) (* Write request ON *) &(Var_Flag_Exe=FALSE) (* Execution flag *) &(SW83.E=FALSE))THEN (* Data link status of station number 63 *) (* Sets control data *) MOV(TRUE, 63, Var ControlData[1]); (* Sets station number *) MOV(TRUE, H4, Var_ControlData[2]); (* Sets access code and attribute code *) MOV(TRUE, H111, Var ControlData[3]); (* Sets buffer memory address *) MOV(TRUE, 1, Var_ControlData[4]); (* Sets number of write points *) (* Sets interlock signal storage device *) MOV(TRUE, H4, Var_InterlockData[0]); (* Sets request device *) MOV(TRUE, H104, Var_InterlockData[1]); (* Sets completion device and error code storage area device *) MOV(TRUE, H1, Var_InterlockData[2]); (* Sets completion mode *) (* Sets data to be written to intelligent device station *) MOV(TRUE, 11, D10); G_RISEND(TRUE, H00, Var_ControlData, Var_InterlockData, D10, Var_Result); (* Performs writing *) END IF; IF(MEP((Var Flag Inst=TRUE) & (SW83.E=FALSE)))THEN (* Write request is ON and data link status of station number 63 is OFF (rising pulse) *) SET(TRUE, Var_Flag_Exe); (* Turns execution flag ON *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) Process on normal completion *) ELSE (* Error completion *) Process on error completion *) END IF; RST(TRUE, Var_Flag_Inst); (* Turns write request OFF *) RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *)

END_IF;

G_RISEND

5.3.5 RIFR instruction

G_RIFR

G(P)_RIFR					P: Executing condition	: 🕈	
Structured EN Un* n1 n2 n3		- - ENO:= <u>G</u> _	ST RIFR (EN, Un*, n1, n2, n3, d);	C	indicates any nstructions. G_RIFR GP_RIFR	of the followin	ıg
Input argument	EN: Un*: n1: n2:	three digits) Intelligent device sta Random access bu Offset value of spec		:/) number in :/	Bit ANY16 ANY16 ANY16		
Output argument	n3: ENO: d:	Number of read poi Execution result Start number of the	nts device that stores read data	:E	ANY16 Bit ANY16		
		Setting International Internat	Al device R, ZR Bi	J::::\:::: it Wor	U[]]\G[]] Zr d	Constant K, H	Others
	Ť	n2 0	0		_	0	-
	1	n3 O	0		_	0	_
	Ī	- b	0		-	-	-

*1: Local devices and file registers per program cannot be used as setting data.

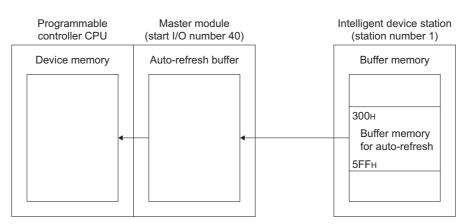
Grant Function

This instruction reads data from the auto-refresh buffer of the specified station.

The instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).

Program Example

The following program reads out 10-word data from buffer memory starting from the offset value 100 of the auto-refresh buffer of the master module (400H in the intelligent device station) and stores the data in the devices starting from D0 when X0 turns ON.



(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder]

1	X0 · SW80.0 · · · · · · · · · · · · · · · · · ·
	Un* d D0 · · ·
	••••••••••••••••••••••••••••••••••••••
	••••••••••••••••••••••••••••••••••••••
	· · · · · · · · · · · · · · · · · · ·
······	
	[S1]

IF((X0=TRUE) & (SW80.0=FALSE))THEN

GP_RIFR(TRUE, H04, 1, H100, 10,D10); END_IF; (* Performs readout *)

G_RIFR

5.3.6 RITO instruction

G_RITO

G(P)_RITO				P: Executing c	ondition	: 🛧	
Structure EN Un* n1 n2 n3			ST (EN, Un*, n1, n2, n3, d);	G_RITO GP_RITO	cates any of t	ne followir	ıg
Input argument	Un*: S ((th	nree digits)	its when expressing the I/O nu				
	R n2: C	ntelligent device station Random access buffer s Offset value of specified r random access buffer	pecification (FFн) intelligent device auto-refresh	:ANY16 buffer :ANY16			
Output argument	ENO: E	lumber of write points Execution result Start number of the devi	ce that stores write data	:ANY16 :Bit :ANY16			
		etting Internal dev ata *1 Bit N	vice J Nord R, ZR Bit	Word UIII\GIII	Zn	Constant K, H	Othe
	(0	0	_		0	_
	(@	0	_		0	-
	(n 0	0	_		0	-
	(- b	0	-		-	- 1

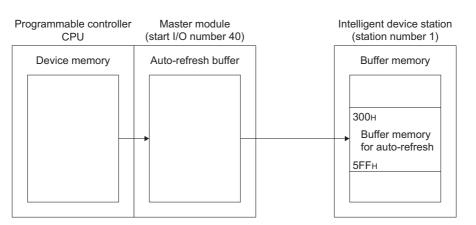
Grant Function

This instruction writes the data to the auto-refresh buffer of the specified station.

The instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).

Program Example

The following program write 10-word data which are stored in the devices starting from D0 into buffer memory starting the offset value 100 of the auto-refresh buffer of the master module (400H in the intelligent device station) when X0 turns ON.



(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder]

1	×X0 · SW80.0 · · · · · · · · · · · · · · · · · ·	rms
	Un* d 00 · · ·	9
	n1	
	n2	
	· · · · · · · · · · · · · · · · · · ·	
L		

[ST]

IF((X0=TRUE) & (SW80.0=FALSE))THEN

GP_RITO(TRUE, H04, 1, H100, 10,D10); END_IF; (* Performs writing *)

5.3.7 RLPASET instruction

G_RLPASET

G(P)_RLPAS	SET		P: Executing condition :	
Structure G RLP EN Un* s1 s2 s3 s4 s5		= = ENO:= G_F	ST RLPASET (EN, Un*, s1, s2, s3, s4, s5, d);	indicates any of the following instructions. G_RLPASET GP_RLPASET
Input argument	EN: Un*: s1: s2: s3: s4: s5: ENO: d:	three digits) Variable that stor Variable that stor Variable that stor Variable that stor Variable that stor assignment data Execution result Variable that turn	of the module two digits when expressing the I/O es control data es slave station setting data es reserved station specification da es error invalid station specificatior es send/receive and auto-refresh b s ON upon completion of the instru	:Array of ANY16 [07] :Array of ANY16 [063] ata :Array of ANY16 [03] a data :Array of ANY16 [03] :Array of ANY16 [07] :Bit
			N at the time of error completion.	JIIII GIII Zn Constant Others Word - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

This instruction sets the network parameters to the master station and starts up the data link.

Device	Item	Setting data	Setting range*2	Setting side
s1 [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঞ্জ[1]	Setting flag	Specify the validity of each setting data from @ to @ . 0: Invalid ^{*1} 1: Valid b15 b14b13 b4 b3 b2 b1 b0 C Reserved station setting data(s2) C Reserved station specification data(s3) Error invalid station specification data(s4) Send/receive and auto-refresh buffer assignment data(s5) 00: Remote net (Ver. 1 mode) 01: Remote net (Ver. 2 mode) 11: Cannot be used	_	User
st][2]	Number of connected modules	Set the number of connected slave stations.	1 to 64	User
ৱা[3]	Number of retries	Set the number of retries to be performed to a communication error station.	1 to 7	User
st][4]	Number of automatic return modules	Set the number of slave stations that can be returned in one link scan.	1 to 10	User
ঃা [5]	Operation specification when CPU is down	Specify the data link status when a master station programmable controller CPU error occurs. 0: Stop 1: Continue	0, 1	User
s1[6]	Scan mode specification	Specify the link scan mode for sequence scan. 0: Synchronous 1: Asynchronous	0, 1	User
s1[7]	Delay time specification	Set '0' for the delay time.	0	User

MODULE DEDICATED

*1: For the setting data for which invalid is specified, default parameter is applied.

*2: Setting a value outside the setting range results in error completion of the instruction.

Device Item Setting data Setting range Setting side Set the slave station type, the number of occupied slave stations, and the station number as shown below. b15 to b12 b11 to b8 b7 b0 Station number Number of occupied slave stations Type of slave station Default parameter setting is '0101H to 0140H (station number: 1 to 64, number of occupied slave stations: 1, type of slave station: Ver.1 compatible remote I/O station)' Setting of station number 1 to 40н 1 to 64 (BIN setting) Setting of the number of occupied slave stations Number of occupied slave Setting stations 1 station 1н 1 to 4н s2[0] Setting for 1 to 64 2 stations 2н to User modules*3 3 stations 3н s2 [63] 4 stations 4н Setting of slave station type*4 Type of slave station Setting Ver.1 compatible remote I/O station 0н Ver.1 compatible remote device station 1н Ver 1 compatible intelligent device station 2н Ver.2 compatible single remote device station 5н Ver.2 compatible single intelligent device station 6н 0 to FH Ver.2 compatible double remote device station 8н Ver.2 compatible double intelligent device station 9н Ver.2 compatible quadruple remote device station Вн Ver.2 compatible quadruple intelligent device station Сн Ver.2 compatible octuple remote device station Εн Fн Ver.2 compatible octuple intelligent device station

(1) Slave station setting data

*3 : Set the same number which was set for Number of connected modules in the control data.

*4 : Setting a value outside the setting range in the setting of slave station type results in error completion of the instruction.

(2) Reserved station specification data

Device	Item		Setting data							Setting range	Setting side																						
		Specify the r 0: Not sp 1: Specifi	ecifie ed	d																													
s3 [0]	Specification for 1 to 64	(s3)[0]	b15 16	b14 15	b13 14	b12 13	to to	b3 4	b2 3	b1 2	b0																						
to	stations ^{*5}	-				-	-														(s3[1]	32	31	30	29	to	20	19	18	17		-	User
\$3[3]		s3[2]	48	47	46	45	to	36	35	34	33																						
		s3[3]	64	63	62	61	to	52	51	50	49																						
		1 to 64 in the table indicates a station number.																															
		Default para	meter	settin	g is '0	: Not	specif	ied' fo	r all s	tations	S.																						

*5 : Set the parameter up to the largest station number set in the slave station setting data.

*6: Set the parameter only to the start station number of the module for the remote station/local station/ intelligent device station that occupies two or more stations.

(3) Error invalid station specification data

Device	Item		Setting data							Setting range	Setting side			
(d) [0] to (d) [3]	Specification for 1 to 64 stations ^{*7}	Specify the of 0: Not sp 1: Specifi s4][0] s4][1] s4][2] s4][3] Default para	ecifie ied <u>b15</u> 16 32 48 64	d <u>b14</u> 15 31 47 63	b13 14 30 46 62 to 64	b12 13 29 45 61 in the							_	User

*7: Set the parameter up to the largest station number set in the slave station setting data.
*8: Set the parameter only to the start station number of the module for the remote station/

Set the parameter only to the start station number of the module for the remote station/local station/ intelligent device station that occupies two or more stations.

Reserved station specification has a priority when an error invalid station and reserved station are specified for the same station.

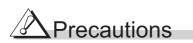
Device	Item		ing data	Setting range	Setting side	
		Specify the buffer memory siz transmission for local stations	ze assignment at transient and intelligent device stations.			
ෝ [0] to	Specification for 1	(\$5)[0] Send buffer size (\$5)[1] Receive buffer size (\$5)[2] Auto-refresh buffer size	Setting for the 1st module	Send/receive buffer ^{*10} : 0H (no setting) 40H to 1000H 0 (word) (no setting) 64 to 4096 (words)	User	
s\$ [77]	to 26 modules ^{*9}	(s5)[75] Send buffer size (s5)[76] Receive buffer size (s5)[77] Auto-refresh buffer size	Setting for the 26th module	Auto-refresh buffer ^{*11} : Он (no setting) 80н to 1000н 0 (word) (no setting) 128 to 4096 (words)		
		Default parameter setting is 's buffer size: 40H, auto-refresh				

(4) Send/receive and auto-refresh buffer assignment data

*9: Set the assignment data, in ascending order, for the stations set for a local station or intelligent device station in the slave station setting data.

*10: Keep the total of the send/receive buffer size within 1000н (4096 (words)). Specify the size added seven words to the size of send/receive data as the send/receive buffer size. Setting a value outside the setting range results in error completion of the instruction.

*11 : Keep the total of the auto-refresh buffer size within 1000H (4096 (words)).
 Specify the necessary auto-refresh buffer size for each intelligent device station.
 Setting a value outside the setting range results in error completion of the instruction.

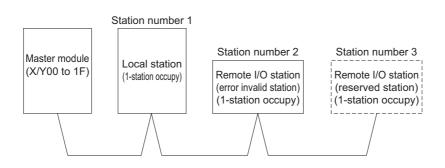


The RLPASET instruction is applicable to the QJ61BT11 of which the function version is B and the first five digits of the serial number are '03042' or higher.

The QJ61BT11N is compatible with the RLPASET instruction.

Program Example

The following program sets the network parameter to the master module mounted on the I/O number X/Y00 to X/Y1F, and starts up the data link.



[Structured ladder]

1	SM400 FROM I EN I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	Reads SB0040 to SB01FF
	28 n3 EN EN H0 n1 H640 n2 448 n3	Reads SW0040 to SW01FF
2	SM402 SB6E SET EN ENO d Ver_Flag_Inst	Parameter setting command
3	Var_Flag_Inst · · · · · · · · · · · · · · · · · · ·	Clears completion status
	EN MOV 15s dVar_ControlData[1]	Sets all of setting flags to Valid
	BN ENO 3 s d Var_ControlData[2]	Sets number of connected modules
	EN MOV s d Var_ControlDate[3]	Sets number of retries
	EN EN EN d MOV MOV	Sets number of automatic return modules Sets operation specification when
	EN MOV s d	Sets operation specification when CPU is down to stop Sets scan mode specification to
	EN ENO s d	asynchronous Set delay time specification
4	EN EN EN 0 s d -Var_ControlData[7]	First module: local station,
	H2101 EN ENO s d Ver_SlaveStation[0]	1-station occupy, station number 1 Second module: Remote I/O station,
	H102 s d -Ver_SlaveStation[1]	1-station occupy, station number 2 Third module: Remote I/O station,
5	H103 S d Var_SlaveStation[2]	1-station occupy, station number 3 Reserved station specification:
	EN ENO s d Var_ReservedStation[0]	station number 3
6	Var_Flag_Inst H2 s d Var_ErrorInvalidStation[0]	Error invalid station specification: station number 2
7	Ver_Flag_Inst 100 EN ENO Ver_BufferSize[0]	First module: local station, send buffer 100 words
	EN ENO s d Var_BufferSize[1]	Receive buffer 100 words
	EN ENO s d	Auto-refresh buffer 0 word
8	Ver_Flag_Inst Ver_ControlData s1 Ver_ErorthvelidStation s2 Ver_BeservedStation s3 Ver_BeservedStation s3 Ver_BeservedStation s4	Performs parameter setting and data link start
9	Var_Result[0]	Turns parameter setting command OFF
	Var_Result[1]	Refresh command
	Ver_Result[1] Process on error completion	Control program start command

[ST] FROM(TRUE, H0, H5E4, 28, K4SB40); (* Reads SB0040 to SB01FF *) FROM(TRUE, H0, H640, 448, SW40); (* Reads SW0040 to SW01FF*) IF((SM402=TRUE) & (SB6E=TRUE))THEN SET(TRUE, Var Flag Inst); (* Parameter setting command *) END IF: (* Parameter setting command ON *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 0, Var ControlData[0]); (* Clear completion status *) MOV(TRUE, 15, Var_ControlData[1]); (* Sets all of setting flags to Valid *) MOV(TRUE, 3, Var_ControlData[2]); (* Sets number of connected modules *) MOV(TRUE, 3, Var ControlData[3]); (* Sets number of retries *) MOV(TRUE, 1, Var_ControlData[4]); (* Sets number of automatic return modules *) MOV(TRUE, 0, Var_ControlData[5]); (* Sets operation specification when CPU is down to stop *) MOV(TRUE, 0, Var_ControlData[6]); (* Sets scan mode specification to asynchronous *) (* Set delay time specification *) MOV(TRUE, 0, Var ControlData[7]); MOV(TRUE, H2101, Var_SlaveStation[0]); (* First module: local station, 1-station occupy, station number 1 *) MOV(TRUE, H0102, Var SlaveStation[1]); (* Second module: Remote I/O station, 1-station occupy, station number 2*) MOV(TRUE, H0103, Var SlaveStation[2]); (* Third module: Remote I/O station, 1-station occupy, station number 3 *) MOV(TRUE, H4, Var_ReservedStation[0]); (* Reserved station specification: station number 3 *) MOV(TRUE, H2, Var ErrorInvalidStation[0]); (* Error invalid station specification: station number 2 *) MOV(TRUE, 100, Var BufferSize[0]); (* First module: local module, send buffer 100 words *) MOV(TRUE, 100, Var_BufferSize[1]); (* Second module: local station, receive buffer 100 words *) MOV(TRUE, 0, Var_BufferSize[2]); (* Third module: local station, auto-refresh buffer 0 words *) GP RLPASET(TRUE, H00, Var ControlData, Var SlaveStation, Var_ReservedStation, Var_ErrorInvalidStation, Var_BufferSize, Var Result); (* Performs parameter setting *) END IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, SB3); (* Refresh command *) SET(TRUE, Var_Flag_Exe); (* Control program start command *) ELSE (* Error completion *) (* Process on error completion *) END IF; RST(TRUE, Var Flag Inst); (* Turns parameter setting command OFF *) END IF;

5.4 CC-Link IE Controller Network, MELSECNET/H, and Ethernet Instruction

5.4.1 READ instruction

J(P)_READ

G(P)_READ



CC IE	NET/H	E71

P: Executing condition

indicates any of the following Structured ladder ST instructions. J_READ JP_READ J_READ G_READ GP READ G READ ENO ENO ΕN ΕN ENO:= J_READ (EN, Jn*, s1, s2, d1, d2); d1 Un d1 Jn ENO:= G_READ (EN, Un*, s1, s2, d1, d2); s1 d2 s1 d2 s2 s2 ·Bit Input argument EN: Executing condition :ANY16 Jn*: Network number of the host station (1 to 239, 254) 254: Network specified in "Valid module during other station access" :ANY16 Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Variable that stores control data :Array of ANY16 [0..17] s2: Start number of the target station's device from which data are :ANY read Output argument ENO: Execution result ·Bit d1: Start number of the host station's device that stores read data :ANY16 d2: Variable that turns ON upon completion of the instruction :Array of bit [0..1] d2[1] also turns ON at the time of error completion. Setting Internal device J....\... Others R, ZR Zn Constant U....\G.... data *1 Bit Word Bi Word (s1) _ (s2) _ _ d1) _ \bigcirc _ *1: Local devices and file registers per program cannot be used as setting data.

Section 1

This instruction reads data from a word device of another station.

5

READ, G_READ

Control Data

Device	Item			Setting	data		Setting range	Setting side ^{*1}
ৱ) [0]	Error completion type	Spec 0: Cl st 1: C	b15 to b7 to b0 0 1 0 1 1 Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0: Clock data at the time of error completion is not set in the area starting from (st) [11]. 1: Clock data at the time of error completion is set in the area starting from (st) [11]. The instruction completion status is stored.				0001н, 0081н	User
st [1]	Completion status	0	:	pletion status is si Normal completi Error completior	on		_	System
s1 [2]	Channel used by host station	Specify	the channel	used by the host	station.		1 to 8	User
			y the type o ing value	of the target stat Target station CF	Description		0000н, 03FFн	
		Ethernet	0000н 03FFн ^{*1}	data are the sam	e as '03FFн'.)		USFFH	
ৱা [3]	Target station's CPU type	t station's CPU type WELSE CNET/H MELSE controller network	0000н	Target station CF data are the sam	е as '03FFн'.)		User	
			03E0H ^{*2}	Multi-CPU No. 1/target station CPU (single CPU system)		0000н, 03Е0н to		
			B 03E1H ^{*2} Multi-CPU No. 2			03E3н, 03FFн		
		ME Link I	03E2н ^{*2} 03E3н ^{*2}	Multi-CPU No. 3 Multi-CPU No. 4			USFFH	
		Ś	03FFH ^{*1} Target station CPU/host system CPU					
্রা[4]	Target station network No.		239 : Netw	rork number of the tar ork number ify this when 254		t in Jn.	1 to 239, 254	User
				number of the targ	et station.			
st [5]	Target station No.	et station No. Ethern MELS		1	1 to 64		1 to 120	User
		CC-Link IE controller network 1 to 120						
s1 [6]	-	Reserv	ed				0	User
st [7]	Number of resends	Spec	 For instruction execution Specify the number of resends when the instruction is not completed within the monitoring time specified in (a) [8]. 		0 to 15	User		
		 2 At instruction completion The number of resends (result) is stored. 				-	System	

Device	Item		Setting range	Setting side ^{*1}		
		Specify the monitoring the first of the instruction is not connumber of times specifie				
		Des	scription	Setting value		
s) [8]	Arrival monitoring time	Ethernet	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second)	0 to 16383	0 to 32767	User
		CC-Link IE	0: 10 seconds 1 to 32767: 1 to 32767 seconds	0 to 32767		
		Specify the number of re	ad data.			
			scription	Setting value		User
st) [9]	Read data length	Ethernet MELSECNET/H CC-Link IE controller network	Reading from the QCPU	1 to 960 (word)	1 to 960	
st [10]	-	Reserved			-	User
s1 [11]	Clock set flag ^{*3}	Valid/invalid status of the 0: Invalid 1: Valid				
ৱা [12] to ৱা [15]	Clock data at the time of error completion ^{*4}	b15 to (s1) [12] Month (01H t (s1) [13] Hour (00H to (s1) [14] Second (00H	(s1) [12] Month (01H to 12H) Year (00H to 99H) Last two digits (s1) [13] Hour (00H to 23H) Day (01H to 31H) (s1) [14] Second (00H to 59H) Minute (00H to 59H)			
ৱা [16]	Error-detected network No.	(However, when an error number is not stored.)	Network number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) 1 to 239: Network number			
ঞ্জ[17]	Error-detected station No. *3		nere an error was detected is r was detected at the host sta 1 to 64 1 to 120		-	System

*1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

*2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

Network module: The first five digits of the serial number are '06092' or higher.
QCPU: The first five digits of the serial number are '06092' or higher.

*3: Data are stored only when 1 is set in bit 7 of Error completion type ((() [0]).

Program Example

The following program reads out data from the devices from D250 to D254 in the station number 4 (target station) and stores the data to the devices from D700 to D704 of the station number 1 (host station).

1		Sets error				
	Var_Flag_Insts +H81s Var_ControlData[0] + ++	completion type				
	MOV EN ENO	Sets channel used by host station				
	K1 — s d — Var_ControlData[2] · ·	by nost station				
		Sets target station's				
	□ · · · · · · · · · · · · · · · · · · ·	CPU type				
	MOV	Sets target station				
	· · · · · · · · · · · · · · · K1 — s d — Var_ControlData[4] · ·	network number				
	MOV	Sets target station				
	····· · K4— s d —Var_ControlData[5] ···	number				
	Image: Second					
	MOV	Sets number of				
	EN ENO EN	resends				
		Sets monitoring time				
	EN ENO	Octo monitoring time				
	····································					
		Sets data length by the word				
	K5 K					
	EN ENO EN EN [10]					
	· · · · · · · · · · · · · · · · · · ·					
2	Var_Flag_Exe SB47 SW0A0.3 JP_READ · · · · · · · · · · · · · · · · · · ·	Performs readout				
	· · · · · · · · · · · · · · · · · Jn* d1 D700 · · · · · · · ·					
	s1 d2 Var_Result s s1 var_Resu					
3	Var_Result[0]					
	Process on completion of readout	Execution finished				
	Var_Result[1]	Normal completion				
	Process on normal completion					
	Var_Result[1] · · · · · · · · · · · · · · · · · · ·					
	MOV	Stores error code				
	EN ENO - · · · · · · · · · · · · · · · · · ·					

[Structured ladder]

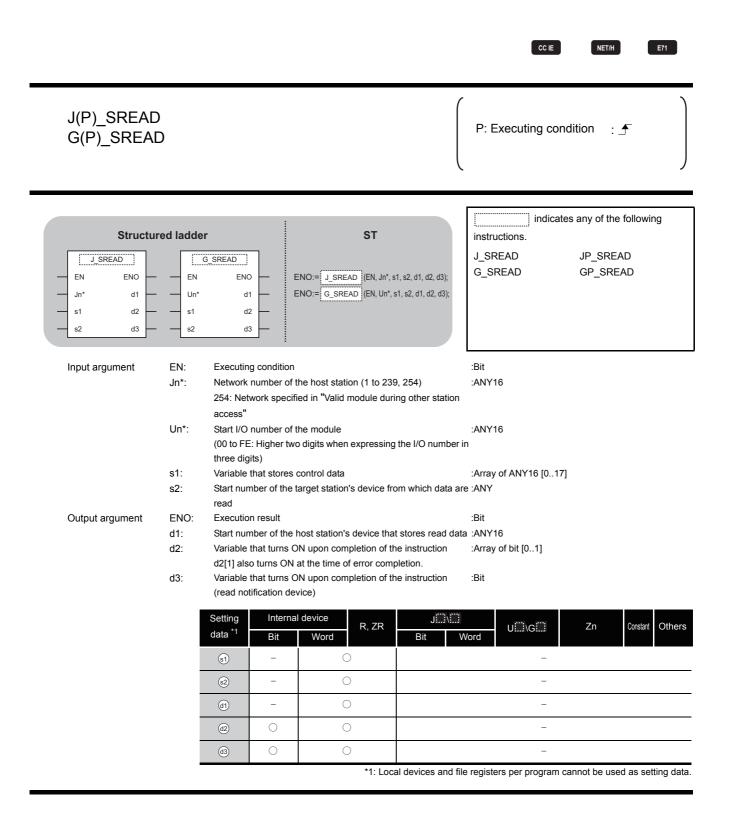
[ST]	
IF (LDP(TRUE,Var_Flag_Inst)) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets error completion type *)
MOV(TRUE,K1,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,K1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,K4,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,K0,Var_ControlData[6]);	
MOV(TRUE,K5,Var_ControlData[7]);	(* Sets number of resends *)
MOV(TRUE,K0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,K5,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,K0,Var_ControlData[10]);	
END_IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE)	, , , , , , , , , , , , , , , , , , ,
JP_READ(TRUE,1,Var_ControlData,D250),D700,Var_Result);(* Performs readout *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of readout *)	
IF(Var_Result[1]=FALSE)THEN	
(* Process on normal completion *	')
ELSE	(* Error completion *)
(* Process on error completion *)	
MOW/TRUE Var ControlData[1] V	ar_ErrorCode);(* Stores error code *)
END IF;	
END_IF,	

END_IF;

MODULE DEDICATED INSTRUCTION

5.4.2 SREAD instruction

J_SREAD, G_SREAD



Grant Function

This instruction reads data from a word device of another station.

Control Data

For the control data of the SREAD instruction that reads the word device memory of another station, refer to READ instruction.

The control data of the SREAD instruction are the same as those of the READ instruction.

Accordingly, this section omits the explanation.

Program Example

The following program example of the SREAD instruction is different from that of the READ instruction by assigning the read notification device $_{\textcircled{3}}$ at the end of arguments.

1		Sets error
	Var_Flag_Inst EN EN EN EN EN Var_ControlData[0] · · · · · · · · · · · · · · · · · · ·	completion type
	MOV EN <	Sets channel used by host station
	H0 s d Var_ControlData[3]	Sets target station's CPU type
	MOV EN ENO	Sets target station network number
	MOV EN K4 s d Var_ControlData[5]	Sets target station number
	MOV EN ENO	
	MOV EN ENO	Sets number of resends
	MOV EN ENO	Sets monitoring time
	MOV EN ENO	Sets data length by the word
2	Var_Flag_Exe SB47 SW0A0.3 J_SREAD I I I I EN ENO I I I I I II III I III IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Performs readout
3	Var_Result[0] Process on completion of readout	Execution finished
	Var_Result[1] Process on normal completion	Normal completion
	Var_Result[1] Process on error completion	Error completion
	Var_ControlData[1]s MOV Var_ErrorCode	Stores error code

[Structured ladder]

[ST] IF (LDP(TRUE,Var_Flag_Inst)) THEN MOV(TRUE,H81,Var_ControlData[0]); MOV(TRUE,K1,Var_ControlData[2]); MOV(TRUE,H0,Var_ControlData[3]); MOV(TRUE,K1,Var_ControlData[3]); MOV(TRUE,K4,Var_ControlData[4]); MOV(TRUE,K4,Var_ControlData[5]); MOV(TRUE,K0,Var_ControlData[6]); MOV(TRUE,K5,Var_ControlData[7]); MOV(TRUE,K0,Var_ControlData[8]); MOV(TRUE,K5,Var_ControlData[8]);	 (* Sets error completion type *) (* Sets channel used by host station *) (* Sets target station's CPU type *) (* Sets target station network number *) (* Sets target station number*) (* Sets number of resends *) (* Sets monitoring time *) (* Sets data length by the word *)
MOV(TRUE,K5,Var_ControlData[9]); MOV(TRUE,K0,Var_ControlData[10]);	(* Sets data length by the word *)
END_IF; IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) , J_SREAD(TRUE,1,Var_ControlData,D250, END IF;	. ,,
	(* Execution finished *)
(* Process on completion of readout *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
MOV(TRUE, Var_ControlData[1], Var END_IF;	r_ErrorCode);(* Stores error code *)

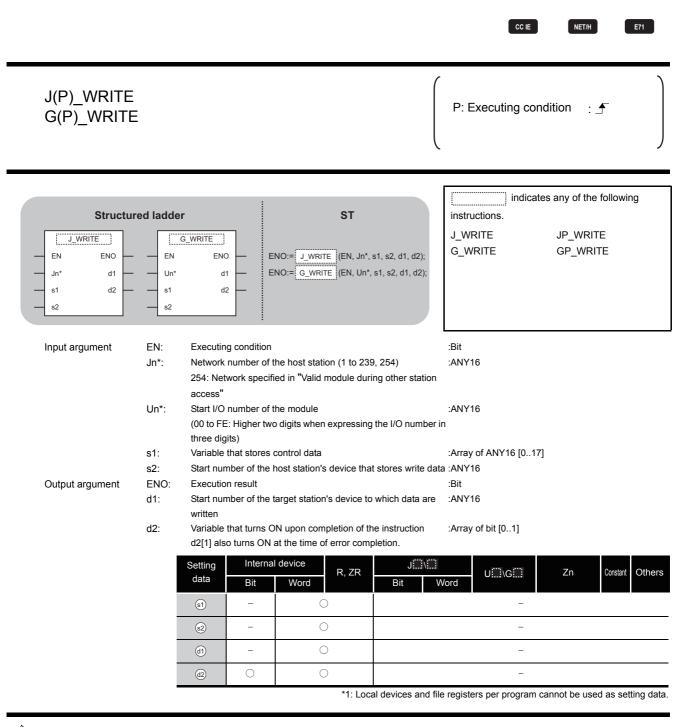
END_IF;

MODULE DEDICATED INSTRUCTION

J_SREAD, G_SREAD

5.4.3 WRITE instruction

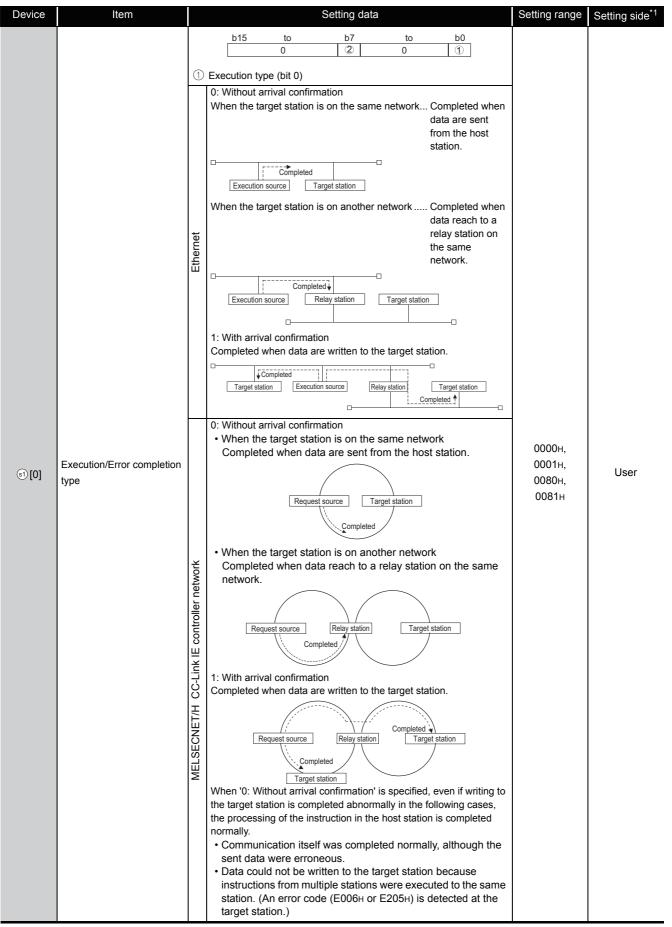
J_WRITE, G_WRITE



\overleftrightarrow Function

This instruction writes data to a word device of another station.

Control Data



J_WRITE, G_WRITE

Device	Item			Setting data	Setting range	Setting side ^{*1}
ঃ] [0]	Execution/Error completion type	Specify 0: Clock startii 1: Clock	or completion the clock da a data at the ng from (si) [7 a data at the (si) [11].	0000н, 0001н, 0080н, 0081н	User	
s1[1]	Completion status	The inst 0 Othe	truction com : r than 0 :	pletion status is stored. Normal completion Error completion (error code)	-	System
s1[2]	Channel used by host station		the channel 3: Channel	used by the host station.	1 to 8	User
J [3]	Target station's CPU type		ng value 0000н 03FFн ^{*1} 0000н 03E0н ^{*2} 03E1н ^{*2} 03E2н ^{*2} 03E2н ^{*2} 03FFн ^{*1}	Description Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Target station CPU/host system CPU Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Multi-CPU No. 1/target station CPU (single CPU system) Multi-CPU No. 2 Multi-CPU No. 3 Multi-CPU No. 4 Target station CPU/host system CPU	0000н, 03FFн 0000н, 03E0н to 03E3н, 03FFн	User
s1 [4]	Target station network No.	Specify 1 to 2 254	the network 239 :	1 to 239, 254	User	

Device	Item		Setting range	Setting side ^{*1}				
		Specify the station num	Setting data ber of the target station.			Botting Side		
		(1) Station number spe						
		Ethernet						
		MELSECNET/H		1 to 64				
		CC-Link IE	Universal model QCPU	1 to 120				
		controller network	High Performance model QC	PU 1 to 64				
			To increase the data reliability when the station number is specified, executing the instruction with setting Execution/Error completion type					
		(s1 [0]) to '1: With arrive	al confirmation' is recommende	d.				
		(2) Group specification						
			tions in group numbers 1 to 32		1 to 120,			
s1 [5]	Target station No.	(Setting is availabl	e when Execution type is set to	o '0: Without	81н to А0н,	User		
		arrival confirmation	י' in 🗊 [0].)		FFн			
			Group No.1 · · · 81н Group No.2 · · · 82н					
			to					
			Group No.32 · · · А0н					
		(3) All stations specifica	cont the best					
		FFH: All stations of station.)						
		(Setting is availabl						
		arrival confirmation						
		To specify a group or a						
		station's CPU type (s1)						
s1[6]	_	(Fixed value)			0	User		
		① For instruction exec						
		Specify the number of r						
		within the monitoring tir	0 to 15	User				
st][7]	Number of resends	Execution type is set to						
		② At instruction comp						
		The number of resends	-	System				
		Execution type is set to						
		Specify the monitoring						
		is available when Exect	ution type is set to '1: With arriva	al confirmation' in				
		s1 [0].)						
			completed within this time, it is	resent by the				
		number of times specifi	ed in 🔄 [7].					
		De	escription	Setting value				
			0 to TCP retransmission	J				
	Arrival maniforing time		timer value: Monitoring is		0 to 20767	Lloor		
st [8]	Arrival monitoring time		performed by the TCP		0 to 32767	User		
		Ethernet	retransmission timer value.	0 to 16383				
			(TCP retransmission timer value + 1) to 16383:					
			Monitoring time (unit:					
			second)					
		MELSECNET/H	0: 10 seconds	<u> </u>				
		CC-Link IE	1 to 32767: 1 to 32767	0 to 32767				
		controller network	seconds					
	1	1			1			

MODULE DEDICATED

Device	Item	Setting dat	a		Setting range	Setting side ^{*1}
		Specify the number of write data.				
		Description	Se	etting value		
্রা [9]	Write data length	Ethernet MELSECNET/H CC-Link IE controller network	CPU	1 to 960 (word)	1 to 960	User
s1[10]	(Reserved)	-			_	-
s1 [11]	Clock set flag ^{*3}	Valid/invalid status of the data in the area 0: Invalid 1: Valid	_	System		
ৱা [12] to ৱা [15]	Clock data at the time of error completion ^{*3}	Clock data at the time of error completion b15 to b8 b7 (at) [12] Month (01H to 12H) Year (at) [13] Hour (00H to 23H) E (at) [14] Second (00H to 59H) Mir (at) [15] Year (00H to 99H) First two digits Day of 00H	_	System		
ঃ] [16]	Error-detected network No.	Network number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) 1 to 239: Network number			_	System
ক্র[17]	Error-detected station No.	Number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) Ethernet 1 to 64 MELSECNET/H 1 to 120 network 1 to 120			_	System

*1 : Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)
 *2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

• Network module: The first five digits of the serial number are '06092' or higher.

• QCPU: The first five digits of the serial number are '06092' or higher.

*3 : Data are stored only when 1 is set in bit 7 of Error completion type ((1) [0]).

Program Example

The following program writes data which are stored in the devices from D750 to D753 of the station number 2 (host station) to the devices from D300 to D303 of the station number 3 (target station).

	[Structured lad	der]		
1				Sets execution/error completion type
	· Var_Flag_Inst s · · · · · · · · · · · · · · · · · · ·	- H81 s d		Sets channel used by host station
	· · · · · · · · · · · · · · · · · · ·	· K2 <u>s</u> d · · · · · · · · · · · · · · · · · · ·	Var_ControlData[2] · · ·	Sets target station's CPU type
	· · · · · · · · · · · · · · · · · · ·	· H0 <u>sd</u> · · · · · · · · · · · · · · · · · · ·	Var_ControlData[3] · · ·	Sets target station network number
		K1 EN ENO 	-Var_ControlData[4]	Sets target station number
	· · · · · · · · · · · · · · · · · · ·	· K3 S d		
		K0 S K0		
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		Sets number of resends
		K0 K		Sets monitoring time
				Sets data length by the word
	· · · · · · · · · · · · · · · · · · ·		Var. ControlData[10];	
2	· · · · · · · · · LDP		· · · · · · · · · · · · ·	Sets write data to D750 to D753
	Var_Flag_Inst2s	EN EN s	IOD750 · · · · · · · · · · · · · · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·	· · · K20 — S	IOD751 · · · · · · · · · · · · · · · · · · ·	
		моч EN EN s	dD752 · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·	К40 в МОУ в Кио	lo d D753 · · · ·	
3	Var_Flag_Exe · SB47· · SW0A0	EN EN	ENO - · · · · · · · · · · · · · · · · · ·	Performs writing
	· · · · · · · · · · · · · · · · · · ·	ar_ControlData.—s1 • • • • • •D750.—s2 • • • • •D300.—s3		
4	Var_Result[0]	Process on completion	of writing	Execution finished
	Var_Result[1]	Process on normal com	pletion	Normal completion
		Process on error comple	· · · · • • • • • •	Error completion Stores error code
	Var_	ControlData[1]s	d Var_ErrorCode	

[Structured ladder]

[ST] IF (LDP(TRUE, Var_Flag_Inst)) THEN MOV(TRUE,H81,Var_ControlData[0]); (* Sets execution/error completion type *) MOV(TRUE,K2,Var_ControlData[2]); (* Sets channel used by host station *) MOV(TRUE,H0,Var ControlData[3]); (* Sets target station's CPU type *) MOV(TRUE,K1,Var ControlData[4]); (* Sets target station network number *) MOV(TRUE,K3,Var_ControlData[5]); (* Sets target station number *) MOV(TRUE,K0,Var ControlData[6]); MOV(TRUE,K5,Var_ControlData[7]); (* Sets number of resends *) MOV(TRUE,K0,Var_ControlData[8]); (* Sets monitoring time *) MOV(TRUE,K4,Var ControlData[9]); (* Sets data length by the word *) MOV(TRUE,K0,Var_ControlData[10]); END_IF; IF (LDP(TRUE,Var_Flag_Inst2)) THEN MOV(TRUE,K10,D750); (* Sets write data to D750 to D753 *) MOV(TRUE,K20,D751); MOV(TRUE,K30,D752); MOV(TRUE,K40,D753); END IF; IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.2=FALSE)) THEN JP_WRITE(TRUE,1,Var_ControlData,D750,D300,Var_Result); (* Performs writing *)

END_IF;

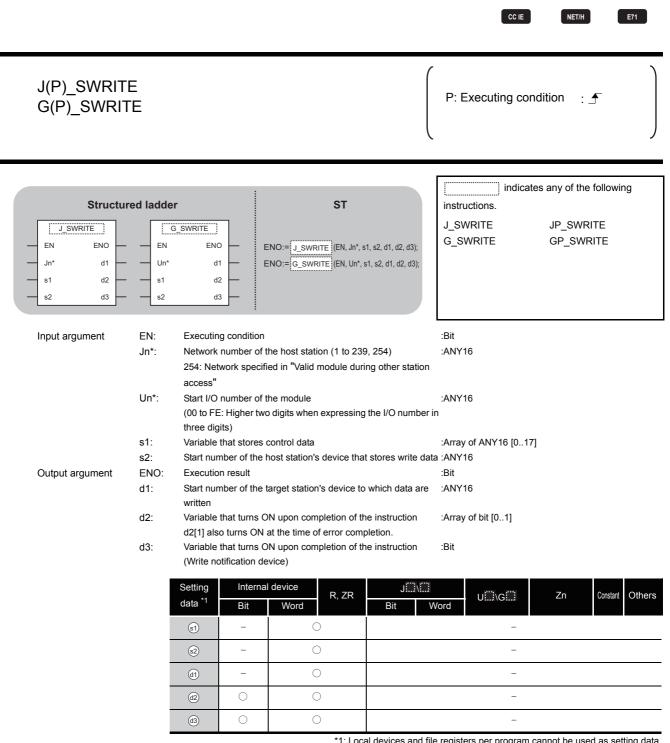
I

(* Execution finished *)
(* Normal completion *)
(* Error completion *)
_ErrorCode); (* Stores error code *)

END_IF; END_IF;

5.4.4 SWRITE instruction

J_SWRITE, G_SWRITE



*1: Local devices and file registers per program cannot be used as setting data.

SWRITE, SWRITE

Grant Function

This instruction writes data to a word device of another station.

Control Data

For the control data of the SWRITE instruction that writes data to the word device memory of another station, refer to WRITE instruction.

The control data of the SWRITE instruction are the same as those of the WRITE instruction.

Accordingly, this section omits the explanation.

Program Example

The following program example of the SWRITE instruction is different from that of the WRITE instruction by assigning the write notification device $_{\textcircled{3}}$ at the end of arguments. [Structured ladder]

- Sets execution/error LDP MOV ΕN ENO ΕN ENO completion type Var_Flag_Inst H81 ntrolData[0] Sets channel used by host station MΟ\ ΕN ENO K2 ControlData[2] Sets target station's CPU type мον ENO EN HO _ControlData[3] Sets target station network number МΟΛ ENO ΕN K1 _ControlData[4] d Sets target station number MO۱ ΕN ENO K3 ControlData[5] мον ΕN ENO ontrolData[6] KO d Sets number of resends MO ΕN ENO K5 ontrolData[7] d Sets monitoring time MΟN ΕN ENO K0-ControlData[8] d Sets data length by the word МΟΛ ΕN ENO Κ4 ControlData[9] MO ΕN ENO KO ControlData[10] d Sets write data to D750 to D753 2 LDP MOV EN ENO ENO ΕN K10 -D750 Var_Flag_Inst2 мον EN ENO K20 D751 d MOV ΕN ENO D752 K30 d MΟN ENO ΕN K40 D753 d 3 ·SB47 SW0A0:2 Performs writing Var Flag Exe JP_SWRITE EN ENO - [4] - | / ||-1. Var_Result Jn d2 Var ControlDete Var_Flag s1 d3 ·D750 ·D300 d1 4 Var_Result[0] - II - II Process on completion of writing Execution finished Var_Result[1] Normal completion -1/-1|-Process on normal completion Var_Result[1] · II · II· Error completion Process on error completion Stores error code MOV ENO EN Var_ControlData[1] /ar_ErrorCode d
- (1) Program on the request source (station number 2) of the SWRITE instruction

(2) Program on the request target (station number 3) of the SWRITE instruction

1		Stores data of
	· · · · · · · · · · · · · · · · · · ·	evices from D300 D303 to devices
	fr	om D500 to D503

[ST]

(1) Program on the request source (station number 2) of the SWRITE instruction

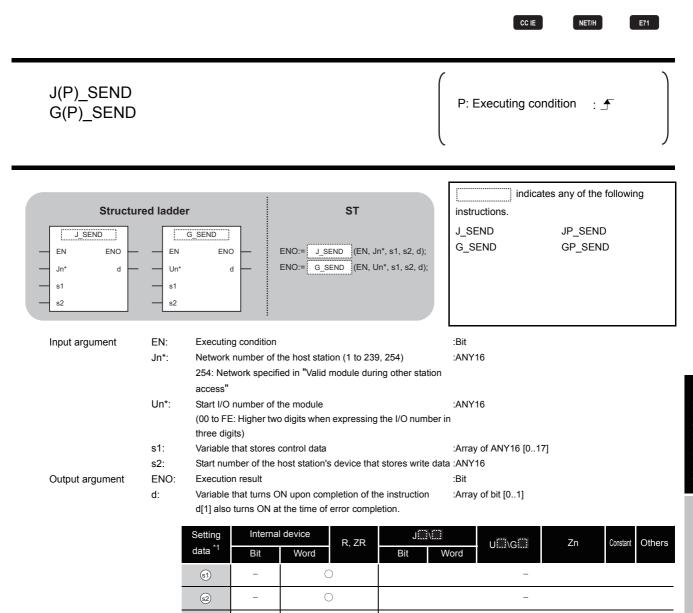
IF (LDP(TRUE,Var_Flag_Inst)) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets execution/error completion type *)
MOV(TRUE,K2,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,K1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,K3,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,K0,Var_ControlData[6]);	
MOV(TRUE,K5,Var_ControlData[7]);	(* Sets number of resends *)
MOV(TRUE,K0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,K4,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,K0,Var_ControlData[10]);	
END_IF;	
IF (LDP(TRUE,Var_Flag_Inst2)) THEN	
MOV(TRUE,K10,D750);	(* Sets write data to D750 to D753 *)
MOV(TRUE,K20,D751);	
MOV(TRUE,K30,D752);	
MOV(TRUE,K40,D753);	
END_IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) A JP_SWRITE(TRUE,1,Var_ControlData,D75	
JF_SWRITE(TROE, I, Val_ContioiData, D75	(* Performs writing *)
END_IF;	(Fenomis whiling)
—	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
	······
(* Process on completion of writing *)	
IF(Var_Result[1]=FALSE)THEN	
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
 MOV(TRUE, Var_ControlData[1], Var	
END IF;	_Enorcode),(Stores enor code)
END_IF, END_IF;	

- (2) Program on the request target (station number 3) of the SWRITE instruction IF(Var_Flag=TRUE) THEN
 - BMOV(TRUE,D300,K4,D500);

(* Stores data of devices from D300 to D303 to devices from D500 to D503 *) END_IF;

5.4.5 SEND instruction





*1: Local devices and file registers per program cannot be used as setting data.

_

☆ Function

This instruction sends data to another station.

 \bigcirc

 \bigcirc

(d)

Control Data

Device	Item		Setting data	Setting range	Setting side ^{*1}
			b15 to b7 to b0		
			0 2 0 1		
		1	Execution type (bit 0)		
			0: Without arrival confirmation		
			When the target station is on the same network Completed when data are sent from the host station.		
			Completed Execution source Target station		
		Ethernet	When the target station is on another network Completed when data reach to a relay station on the same		
		Ethe	Completed Completed Completed Target station		
			c		
			1: With arrival confirmation Completed when data are stored in the specified channel of the target station.		
			0: Without arrival confirmation		
s1 [0]	Execution/Error completion		When the target station is on the same network Completed when data are sent from the host station.	0000н, 0001н,	User
@[0]	type		Request source Target station	0080н, 0081н	
			Completed		
		etwork	 When the target station is on another network Completed when data reach to a relay station on the same network. 		
		C			
		CC-Link IE controller	Request source Relay station Target station Completed		
		Link	1: With arrival confirmation		
			Completed when data are written to the target station.		
		MELSECNET/H	Request source Relay station Target station		
		MELS	Target station		
			When '0: Without arrival confirmation' is specified, even if writing to the target station is completed abnormally in the following cases, the processing of the instruction in the host station is completed		
			 normally. Communication itself was completed normally, although the sent data were erroneous. 		
			 Data could not be written to the target station because instructions from multiple stations were executed to the 		
			same station. (An error code (Е006н or Е205н) is detected at the target station.)		

Device	Item		Setting data		Setting range	Setting side ^{*1}
		② Error completion ty				
	Execution/Error completion	Specify the clock data 0: Clock data at the tin		0000н, 0001н,		
s1 [0]	type	starting from s1 [11]].		0080н,	User
		1: Clock data at the tin	ne of error completion is set in the	area starting	0081н	
		from 🗊 [11].				
		The instruction comple				
s1[1]	Completion status		ormal completion rror completion (error code)		-	System
	Channel used by host		sed by the host station.			
s1 [2]	station	1 to 8: Channel			1 to 8	User
0.001	Target station shannel	Specify the channel of	the target station that stores data.		1 to 8	User
st [3]	Target station channel	1 to 8: Channel			1 to 8	User
			umber of the target station.			
\frown	Target station natwork No.		etwork number	atia la	1 to 220, 254	Lloor
s1 [4]	Target station network No.		pecify this when 254 has been se letwork specified in 'Valid module		1 to 239, 254	User
	-	ation access')	during other			
		Specify the station nur	mber of the target station.			
		(1) Station number spe	ecification			
		Ethernet		1 40 64		
		MELSECNET/H		1 to 64		
		CC-Link IE	Universal model QCPU	1 to 120		
		controller network	High Performance model QCPU	1 to 64		
্রা [5]	Target station No.	 To increase the data receventing the instruction ((i) [0]) to '1: With arrive (2) Group specification 81H to A0H: All state (Setting is available arrival confirmation of the station specification of the station of the station of the state of t	1 to 120, 81 н to А0н, FFн	User		
		station's CPU type (s)[3]).		0	User
s1 [6]	-	(Fixed value)			0	0301
ব্র [7]	Number of resends	within the monitoring ti	ecution resends when the instruction is no ime specified in ⓒ [8]. (Setting is a o '1: With arrival confirmation' in ⓒ	vailable when	0 to 15	User
			s (result) is stored. (Setting is avail		_	System
		Execution type is set t	o '1: With arrival confirmation' in ତ୍ର	0[0].)		

Device	Item		Setting data		Setting range	Setting side ^{*1}
		Specify the monitoring ti is available when Execu in (1)[0].) If the instruction is not c number of times specifie				
		De	scription	Setting value		
ৱ) [8]	Arrival monitoring time	Ethernet	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second)	0 to 16383	0 to 32767	User
		MELSECNET/H CC-Link IE controller network	0: 10 seconds 1 to 32767: 1 to 32767 seconds	0 to 32767		
		Specify the number of s	end data.			
	sĵ [9] Send data length	De	scription	Setting value		
		Ethernet	Writing to the QCPU	1 to 960		
s1 [9]			Writing to the QnACPU	(word) 1 to 960	1 to 960	User
		MELSECNET/H	Writing to the QCPU	(word)		
		CC-Link IE controller network	Writing to the QnACPU	1 to 480 (word)		
s1 [10]	(Reserved)		_		-	_
ഔ[11]	Clock set flag ^{*2}	Valid/invalid status of the 0: Invalid 1: Valid	e data in the area starting fron	n 🕣 [12] is stored.	_	System
্ত[12]	Clock data at the time of error completion ^{*2}	Clock data at the time o b15 to (a) [12] Month (01H (a) [13] Hour (00H (a) [14] Second (00H (a) [15] Year (00H to 99H)	to 23н) Day (01н to 3 н to 59н) Minute (00н to	b0 two digits 1н) 59н) to 06н)	_	System
sা[16]	Error-detected network No. ^{*2}		station where an error was de or was detected at the host sta per		_	System
ৱা[17]	Error-detected station No.*2		there an error was detected is or was detected at the host stand		_	System
		network	1 to 120			

*1: Data are stored only when 1 is set in bit 7 of Error completion type ((s)[0]).

*2: Logical channel setting is not available for the CC-Link IE controller network module.

Program Example

The following program sends data of the devices from D750 to D753 of the station number 1 (host station) to the channel 5 of the station number 2 (target station).

For the method for reading the data, which are sent by the SEND instruction, from the channel 5 of the station number 2 (target station), refer to the following sections.

- For reading out data in a main station
- For reading out data in an interrupt program

Section 5.4.7 RECVS instruction

[Structured ladder]

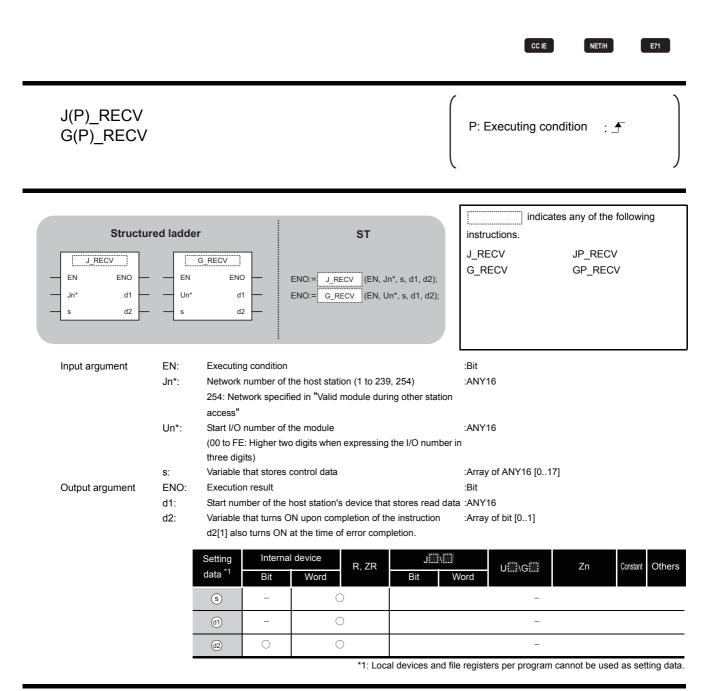
1	· · · · · · · · LDP	MOV	Sets execution/error
	· Var_Flag_Insts	H81sdVar_ControlData[0]	completion type
			Sets channel used by host station
		K3 s d Var_ControlData[2] MOV - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <td>Sets target station</td>	Sets target station
		H5 s d Var_ControlData[3]	channel
		K1s dVar_ControlData[4] ·	Sets target station network number
		MOV	Sets target station
	· · · · · · · · · · · · · · · · · · ·	K2 S Var_ControlData[5]	number
		MOV · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·	
		MOV MOV EN ENO K5 s	Sets number of resends
			Sets monitoring time
		K0 s d Var_ControlData[8] MOV EN ENO	Sets data length by the word
		K4 s d Var_ControlData[9]	
		K0 s d Var_ControlData[10]	
2	Var_Flag_Inst2s	EN ENO K10 s d	Sets send data to D750 to D753
		MOV	
		K30 s d D752 · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · <td></td>	
		EN ENO - · · · · · · · · · · · · · · · · · ·	
3	Var_Flag_Exe · SB47 · SW0A0:1	JP_SEND · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · </th <th>Sends data</th>	Sends data
4	Var_Result[0]		En en line Caintead
	Var_Result[1]	ocess on completion of sending	Execution finished
		ocess on normal completion	Normal completion
	Var_Result[1]	ocess on error completion	Error completion
	Var_Co	ntrolData[1]sdVar_ErrorCode	Stores error code
	L		

5-162

[ST]	
IF (LDP(TRUE,Var_Flag_Inst)) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets execution/error completion type *)
MOV(TRUE,K3,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H5,Var_ControlData[3]);	(* Sets target station channel *)
MOV(TRUE,K1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,K2,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,K0,Var_ControlData[6]);	
MOV(TRUE,K5,Var_ControlData[7]);	(* Sets number of resends *)
MOV(TRUE,K0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,K4,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,K0,Var_ControlData[10]);	
END_IF;	
IF (LDP(TRUE,Var_Flag_Inst2)) THEN	
MOV(TRUE,K10,D750);	(*Sets send data to D750 to D753 *)
MOV(TRUE,K20,D751);	
MOV(TRUE,K30,D752);	
MOV(TRUE,K40,D753);	
END_IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FA	, , , , , , , , , , , , , , , , , , , ,
END IF;	,D750,D300,Var_Result);(* Sends data *)
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
·	,
(* Process on completion of sending) *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal complet	tion *)
ELSE	(* Error completion *)
(* Process on error completio	n *)
MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *)
END_IF;	
END_IF;	

5.4.6 RECV instruction

J_RECV, G_RECV



Gamma Function

This instruction reads received data.

Control Data

Device	Item		Setting data		Setting range	Setting side ^{*1}
ঙ [0]	Error completion type	0: Clock data at the time starting from (\$)[11].	b7 to 2 0 be (bit 7) setup status at the time of error e of error completion is not se e of error completion is set in the	t in the area	0000н, 0080н	User
ঙ[1]	Completion status	Other than 0 : Err	rmal completion or completion (error code)		_	System
s[2]	Host station channel	Specify the channel of I 1 to 8: Channel	nost station that stores receive	e data.	1 to 8	User
ি [3]	Channel used by sending station	Channel used by the se 1 to 8: Channel	ending station is stored.	_	System	
s [4]	Network No. of sending station	Network number of the 1 to 239: Network n	-	System		
ঙ [5]	Sending station No.	Station number of the s Ethernet MELSECNET/H CC-Link IE controller network	ending station is stored. 1 to 64 1 to 120		_	System
⑤[6]	(Reserved)		-		-	-
\$[7]	(Reserved)		-		-	-
			time required for the instructio not completed within the mon			
		De	escription	Setting value		
[8] ھ	Arrival monitoring time	Ethernet MELSECNET/H	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second) 0: 10 seconds	0 to 16383	0 to 32767	User
		CC-Link IE controller network	1 to 32767: 1 to 32767 seconds	0 to 32767		
ঙ [9]	Receive data length	The number of received 0 : No 1 to 960 : Nu	-	System		
⑤ [10]	(Reserved)		-		_	-
S[11]	Clock set flag ^{*1}	Valid/invalid status of th 0: Invalid 1: Valid	e data in the area starting fron	n (s) [12] is stored.	_	System

J_RECV, G_RECV

5-165

Device	Item	Setting data	Setting range	Setting side ^{*1}
\$[12] to \$[15]	Clock data at the time of error completion ^{*1}	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (a) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b0 (b) [13] Hour (00H to 23H) Day (01H to 31H) b1 (b) [14] Second (00H to 59H) Minute (00H to 59H) b1 (c) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) 00H (Sun.) to 06H (Sat.)	-	System
ঙ [16]	Error-detected network No.	Network number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) 1 to 239: Network number	_	System
ঙ[17]	Error-detected station No.*1	Number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) Ethernet 1 to 64 MELSECNET/H 1 to 120	_	System

*1: Data are stored only when 1 is set in bit 7 of Error completion type ((§ [0]).

Program Example

The following program reads out data, which is sent from the station number 1 by the SEND instruction, from the channel 5 of the station number 2 (host station) and stores the data to the devices from D770 to D773 of the station number 2 (host station) when SB0034 turns ON.

For the SEND instruction, refer to the following section.

Section 5.4.5 SEND instruction

[Structured ladder]

1		Sets error
	SM400 s · · · · · · · · · · · · · · · · · ·	completion type
		Sets host station channel
	K5 s d Var_ControlData[2]	
	MOV EN ENO	
	EN ENO K0 s d Var_ControlData[7]	
		Sets arrival monitoring time
	$EN ENO $ $s d - Var_ControlData[10]$	
2	SB34· SB47· JP_RECV F I· I/ EN ENO I· I/ Jn* d1 D770· s d2	Performs readout
3	Var_Result[0] Process on completion of readout	Execution finished
		Normal completion
	a second se	Error completion
	MOV MOV Source	Stores error code

J_RECV, G_RECV

[ST] IF (LDP(TRUE,SM400)) THEN MOV(TRUE,H80,Var_ControlData[0]); (* Sets error completion type *) MOV(TRUE,K5,Var_ControlData[2]); (* Sets host station channel *) MOV(TRUE,K0,Var ControlData[6]); MOV(TRUE,K0,Var ControlData[7]); MOV(TRUE,K0,Var_ControlData[8]); (* Sets arrival monitoring time *) MOV(TRUE,K0,Var_ControlData[10]); END_IF; IF((SB34=TRUE) AND (SB47=FALSE)) THEN JP RECV(TRUE,1,Var ControlData,D770,Var Result);(* Performs readout *) END IF; (* Execution finished *) IF(Var_Result[0]=TRUE)THEN . -----, (* Process on completion of readout *) -----′_____; IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Process on normal completion *) -----ELSE (* Error completion *) (* Process on error completion *) MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END IF; END_IF;

5.4.7 RECVS instruction

Z_RECVS

CC IE NET/H E71

Z_RECVS

	ed ladder ECVS ENO - d1 - d2 -		NO:=	ST	In*, s, d1, d2)		Z_RI	indicat	es the follo	owing instruction
Input argument	EN: Un*: s:	Start I/O (00 to FE three dig Variable	gits) that stores of	o digits when	expressing	the I/O number	:Array	9 v of ANY16 [09]		
Output argument	ENO: d1: d2:	Executio Start nur Dummy		host station's	s device that	stores read da	:Bit ta :ANY [:] :Bit	16		
		Setting data *1	Internal Bit	l device Word	R, ZR	J∭\∭ Bit	Word	U\G	Zn	Constant Othe
		(5) (1)	-		-					
	- 1	d2	0)			_		

This instruction reads received data.

Control Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
⑤ [0]	Completion type	b15 to b0 0 (Fixed)	0	User
s [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
\$[2]	Host station channel	Specify the channel of host station that stores receive data. 1 to 8: Channel	1 to 8	User
⑤ [3]	Channel used by sending station	Channel used by the sending station is stored. 1 to 8: Channel	-	System
s [4]	Network No. of sending station	Network number of the sending station is stored. 1 to 239: Network number	-	System
s [5]	Sending station No.	Station number of the sending station is stored. Ethernet MELSECNET/H CC-Link IE controller network	-	System
\$ [6] \$ [7] \$ [8]	System area	_	-	-
ঙ [9]	Receive data length	The number of received data stored in (#) to (#) + n is stored.0: No receive data1 to 960: Number of words of receive data	-	System

Program Example

The following program reads data, which is sent from the station number 1 by the SEND instruction, from the channel 5 of the station number 2 (host station) and stores the data to the devices from D770 to D773 of the station number 2 (host station) when an interruption program starts up.

For the SEND instruction, refer to the following section.

Section 5.4.5 SEND instruction

1		• • • • • • • • • • • • • • • • • • •	Sets execution/error
	SM400s	s d Var_ControlData[0]	completion type
			Sets host station
		EN ENO - · · · · · · · ·	channel
		Var_ControlData[2]	
			Performs readout
		EN EN - · · · · · · · · · · · · · · · · · ·	
		· · · Var_ControlData s1 · · · · · · · · ·	
		• • • • • • • • • • • • • • • • • • •	
		Process on completion of readout	
	l		

[Structured ladder]

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[ST]

IF (LDP(TRUE,SM400)=TRUE) THEN

MOV(TRUE,H0,Var_ControlData[0]); (* Sets execution/error completion type *)

MOV(TRUE,K5,Var_ControlData[2]); (* Sets host station channel *)

Z_RECVS(TRUE,"U0",Var_ControlData,D770,Var_Dummy);

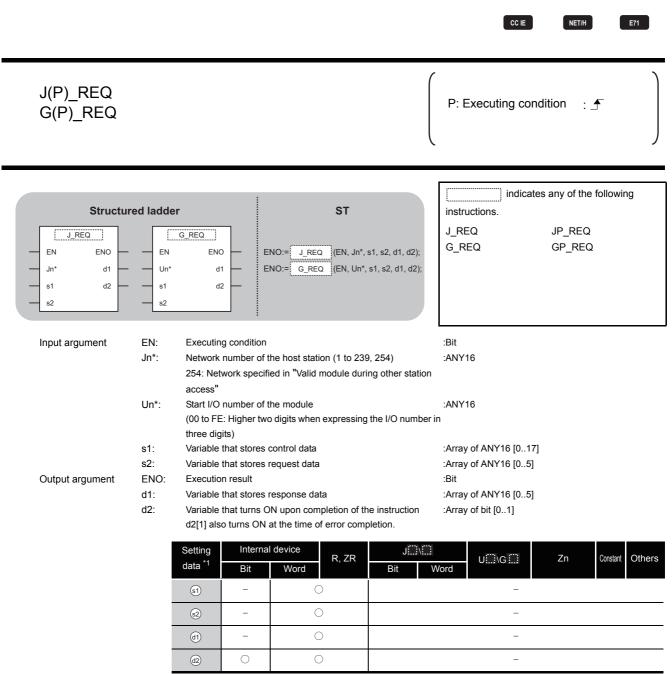
(* Performs readout *)

[ (* Process on completion of readout *)

END_IF;
```

5.4.8 REQ instruction

J_REQ, G_REQ



*1: Local devices and file registers per program cannot be used as setting data.



This instruction sends transient request to another station.

Control Data

Device	Item			Setting range	Setting side ^{*1}		
6) [0]	Error completion type	Specify t 0: Clock from (1: Clock	b15 completion ty he clock data data at the tim (11]. data at the tim (11].	0011н, 0091н	User		
ৱা[1]	Completion status	The instr 0	ruction comple : No	tion status is stored. ormal completion ror completion (error code)		_	System
st [2]	Channel used by host station	1 to 8	: Channel	ed by the host station. target station CPU.		1 to 8	User
্য [3]	Target station's CPU type	MELSECNET/H CC-Link IE controller network	ting value 0000h $03FFh^{*1}$ 0000h $03E0h^{*2}$ $03E1h^{*2}$ $03E2h^{*2}$ $03E3h^{*2}$ $03FFh^{*1}$ the network nu 39 : Ne : Sg (N)	Description Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Multi-CPU No. 1/target station CPU (single CPU system) Multi-CPU No. 2 Multi-CPU No. 3 Multi-CPU No. 4 Target station CPU/host system CPU mber of the target station. twork number ecify this when 254 has been set in Jn. etwork specified in 'Valid module during other station		0000н, 03FFн 0000н, 03E0н to 03E3н, 03FFн 1 to 239, 254	User
্রা [5]	Target station No.	(1) St Etherne MELSE CC-Lini controll (2) Grou 81H to A data writ (3) All st FFF stat STC To speci	access') Specify the station number of the target station. (1) Station number specification Ethernet MELSECNET/H CC-Link IE Universal model QCPU 1 to 120 controller network High Performance model QCPU 1 to 64 (2) Group specification 81H to A0H: All stations in group numbers 1 to 32 (Available only at clock data writing and remote RUN/STOP) Group No.1 · · · 81H Group No.2 · · · 82H to Group No.32 · · · A0H (3) All stations specification FFH: All stations of the target network number (Except the host station.) (Available only at clock data writing and remote RUN/STOP) To specify a group or all stations, set '0000H' or '03FFH' for Target station's CPU type ((a) [3]).				User

J_REQ, G_REQ

Device	Item		Setting data		Setting range	Setting side ^{*1}	
s1 [6]	-	(Fixed value)			0	User	
st)[7]	Number of resends	Specify the number of r	 For instruction execution Specify the number of resends when the instruction is not completed within the monitoring time specified in (s) [8]. At instruction completion The number of resends (result) is stored 				
©[/]		② At instruction comp The number of resends					
			time required for the instructio completed within this time, it is ied in (3) [7].				
		De	escription	Setting value			
ৱ্য [8]	Arrival monitoring time	Ethernet	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second)	0 to 16383	0 to 32767	User	
		MELSECNET/H CC-Link IE controller network	0: 10 seconds 1 to 32767: 1 to 32767 seconds	0 to 32767			
st) [9]	Request data length	Specify the number of r (Number of words of th 4: Remote RUN 3: Remote STOP 2: Clock data read	e data stored in request data s	storage device @)	2 to 6	User	
ঙা [10]	Response data length	Number of response da (Number of words of th 2: Remote RUN/ST 6: Clock data read	e data stored in response data OP	a storage device)	_	System	
st)[11]	Clock set flag ^{*3}	Valid/invalid status of th 0: Invalid 1: Valid	ne data in the area starting from	n ⊚1[12] is stored.	_	System	
ৱা [12] to ৱা [15]	Clock data (set only when errors occur)	Clock data at the time of b15 to ci) [12] Month (01F ci) [13] Hour (00H ci) [14] Second (00 ci) [15] Year (00H to 99H)	_	System			
st) [16]	Error-detected network No. *3		station where an error was de or was detected at the host sta ber		-	System	

Device	Item		Setting range	Setting side ^{*1}	
st][17]	Error-detected station No.		re an error was detected is sto vas detected at the host station 1 to 64	 -	System
		CC-Link IE controller network	1 to 120		

*1 : Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)
 *2: Specification is possible when the versions of the QCPU and the network module on the host station ar

- : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.
 - (Specification is not possible for other modules. An access is always made to the target station CPU.)
 - Network module: The first five digits of the serial number are '06092' or higher.
 - QCPU: The first five digits of the serial number are '06092' or higher.
- *3 : This becomes valid only when 1 is set in bit 7 of Error completion type ((s) [0]).

(1) Remote RUN/STOP

Request data (all set by the user)

Device	Item	Description	Remote RUN	Remote STOP		
	Request type	0010н: When station number is specified in \textcircled{s} [5]	0	0		
s2 [0]	Request type	0030н: When all stations a group is specified in 🗊 [5]	0	0		
0.00	Sub request type	0001н: Remote RUN	0	\sim		
⊚[1]	Sub-request type	0002H: Remote STOP	0	0		
		Specify whether to forcibly execute remote RUN/STOP.				
		0001H: No forced execution				
	Mode	0003н: Forced execution (This setting can be specified for				
s2 [2]		remote RUN.)	0	0		
		(The forced execution is used when the station stopped by				
		remote STOP failed to start in remote RUN to forcibly start it by				
		remote RUN from another station.)				
		Specify the CPU device memory status only for remote RUN.				
		0000H: Not cleared (Note that the local devices are cleared.)				
s2[3]	Clear mode	ar mode 0001H: Cleared (excluding the latch range and settings in		X		
िणि		remote RUN) 0002H: Cleared (including the latch range and settings in remote		Ŭ		
		RUN)				

Response data (all set by the system)

Device	ltem	Description	Remote RUN	Remote STOP
(0] (b)	Request type	0090н: When station number is specified in ङो [5] 00В0н: When all stations or a group is specified in ङो [5]	0	0
d1 [1]	Sub-request type	0001н: Remote RUN 0002н: Remote STOP	0	0

(2) Reading/writing the clock data

Request data (all set by the user (indicated by \bigcirc))

Device	Item	Setting data	Read clock data	Write clock data
€2 [0]	Request type	0001н: Clock data read 0011н: Clock data write (When station number is specified in ⓒ)[5]) 0031н: Clock data write (When all stations or a group is specified in ⓒ][5])	0	0
፼[1]	Sub-request type	0002н: Clock data read 0001н: Clock data write	0	0
@[2]	Change pattern Year data to be changed	 ① Change pattern (bit 0 to 7) Specify the items to be written in high-order byte of (2) [2] to (2) [5]. 0: Not changed 1: Changed ② Year to be changed (bit 8 to 15)*4 Store the year (last two digits) in BCD format. 	μ	0
⊚[3]		High-order 8 bits: Day (01H to 31H), low-order 8 bits: Month (01H to 12H) <u>b15 to b8 b7 to b0</u> Day (01H to 31H) Month (01H to 12H)	_	0
€2 [4]	Clock data to be changed (continued)	bits: Minute (00н to 59н), low-order 8 bits: Hour (00н to 23н) b15 to b8 b7 to b0 Minute (00н to 59н) Hour (00н to 23н) Hour (00н to 23н)	_	0
⊚[5]		High-order 8 bits: Day of week (00н (Sunday) to 06н (Saturday)), low- order 8 bits: Second (00н to 59н) b15 to b8 b7 to b0 □Day of week (00н to 06н) Second (00н to 59н) 00н (Sun.) to 06н (Sat.)	_	0

*4 : This function cannot change the first two digits of year data.

To change the year data including the first two digits, set the clock data using another function (such as GX Works2).

Device	Item	Setting data	Read clock data	Write clock data
@[0]	Request type	0081н: Clock data read 0091н: Clock data write (When station number is specified in ⓐ)[5]) 00В1н: Clock data write (When all stations or a group is	0	0
		specified in ③ [5])		
d1 [1]	Sub-request type	0002н: Clock data read 0001н: Clock data write	0	0
@[2]		High-order 8 bits: Month (01н to 12н), low-order 8 bits: Year (00н to 99н) ^{*5} <u>b15 to b8 b7 to b0</u> <u>Month (01н to 12н) Year (00н to 99н)</u>	0	_
@[3]	*	bits: Hour (00H to 23H), low-order 8 bits: Day (01H to 31H) b15 to b8 b7 to b0 Hour (00H to 23H) Day (01H to 31H) Day (01H to 31H) Day (01H to 31H)	0	_
@[4]	Read clock data	High-order 8 bits: Second (00н to 59н), low-order 8 bits (00н to 59н) b15 to b8 b7 to b0 Second (00н to 59н) Minute (00н to 59н)	0	_
@[5]		High-order 8 bits: (00H), low-order 8 bits: Day of week (00H (Sunday) to 06H (Saturday)) b15 to b8 b7 to b0 00H Day of week (00H to 06H) Day of week (00H to 06H) b0 b0 00H Day of week (00H to 06H) 00H (Sun.) to 06H (Sat.) b0	0	_

Response data (all set by the system (indicated by \bigcirc))

*5 : Last two digits of year data

Program Example

The following program performs remote STOP to the QCPU, which is the station number 2 (target station).

[Structured ladder]

1		Sets execution/error
	Var_Flag_Inst EN EN EN EN EN Var_Flag_Inst s d -Var_ControlData[0]	completion type
	MOV	Sets channel used by
	EN ENO	host station
	· · · · · · · · · · · · · · · · · · ·	
		Sets target station's CPU type
	H0 s d Var_ControlData[3] · · ·	or o type
	MOV	Sets target station
	EN ENO	network number
		Osta tamat station
		Sets target station number
	K2 s d Var_ControlData[5]	number
	EN ENO	
	· · · · · · · · · · · · · · · · · · ·	
		Sets number of resends
	K5 s d Var_ControlData[7] ·	10301103
	MOV	Sets monitoring time
	EN ENO - · · · · · · · · · · · · · · · · · ·	
		Sets data length by the word
	K3— <u>s</u> d—Var_ControlData[9]···	
	MOV	Sets request data
	EN ENO	·
	· · · · · · · · · · · · · · · · · · ·	
	MOV	
	H2— <u>s</u> d—Var_DemandData[1] · ·	
	MOV	
	EN ENO	
	H3s dVar_DemandData[2] · ·	
2	Var_Flag_Exe · SB47· · SW0A0:1 · · · · JP_REQ · · · · · · · · ·	Performs transient
		request to another
	l · · · · · · · · · · · · · · · · · · ·	station
	· · · · · · · · · · · Var_DemandData — s2	×
3	Var_Result[0]	Fue entire finished
	Process on completion	Execution finished
	Var_Result[1]	Normal completion
	Process on normal completion	Normal completion
	Var_Result[1]	Error completion
		Stores error code
	·····Var_ControlData[1]sdVar_ErrorCode ·	

5

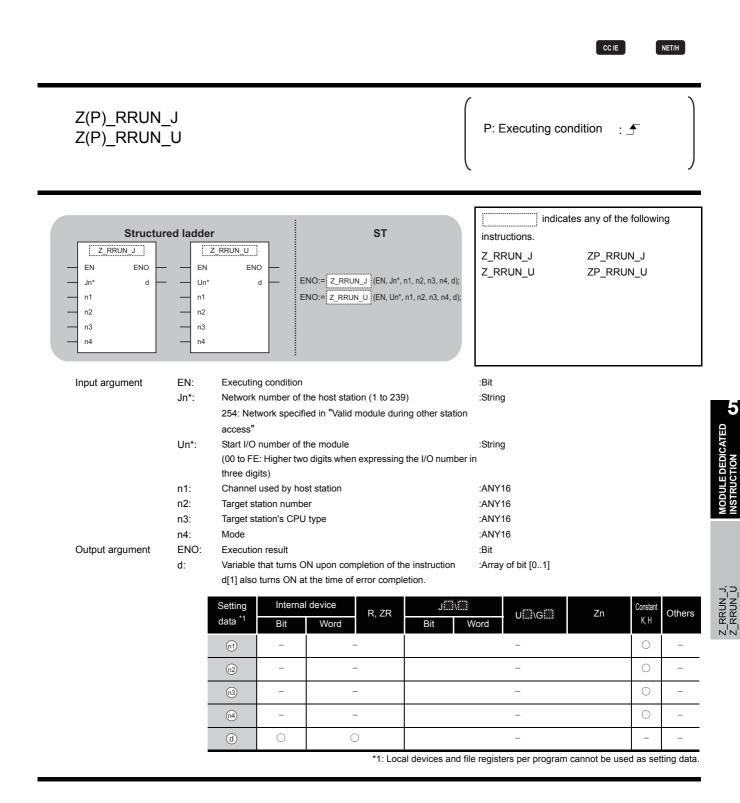
[ST]

```
IF (LDP(TRUE, Var_Flag_Inst)) THEN
    MOV(TRUE,H91,Var_ControlData[0]); (* Sets execution/error completion type *)
    MOV(TRUE,K3,Var_ControlData[2]); (* Sets channel used by host station *)
    MOV(TRUE,H0,Var ControlData[3]); (* Sets target station's CPU type *)
    MOV(TRUE,K1,Var_ControlData[4]); (* Sets target station network number *)
    MOV(TRUE,K2,Var_ControlData[5]); (* Sets target station number *)
    MOV(TRUE,K0,Var ControlData[6]);
    MOV(TRUE,K5,Var_ControlData[7]); (* Sets number of resends *)
    MOV(TRUE,K0,Var_ControlData[8]); (* Sets monitoring time *)
    MOV(TRUE,K3,Var ControlData[9]); (* Sets data length by the word *)
    MOV(TRUE,H10,Var_DemandData[0]);(* Sets request data *)
    MOV(TRUE,H2,Var DemandData[1]);
    MOV(TRUE,H3,Var_DemandData[2]);
END IF;
IF((Var Flag Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN
    JP_REQ(TRUE,1,Var_ControlData,Var_DemandData,Var_ResponseData,Var_Result);
                               (* Performs transient request to another station *)
END_IF;
IF(Var Result[0]=TRUE)THEN
                                    (* Execution finished *)
         -----
     (* Process on completion *)
    IF(Var Result[1]=FALSE)THEN
                                    (* Normal completion *)
           -----
          (* Process on normal completion *)
    ELSE
                                    (* Error completion *)
                           (* Process on error completion *)
         MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *)
    END_IF;
```

END_IF;

5.4.9 RRUN instruction

Z_RRUN_J, Z_RRUN_U



Grant Function

This instruction remotely switches a CPU module on another station to RUN.

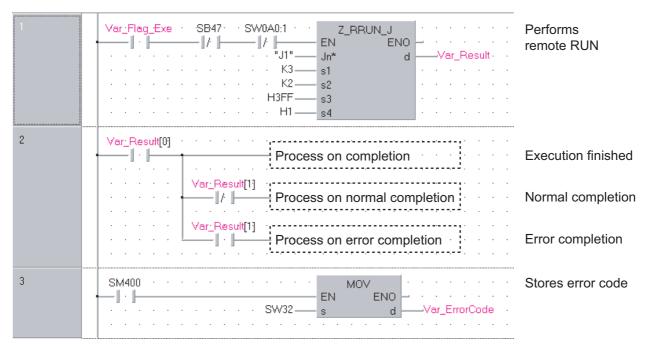
Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program remotely switches the QCPU on the station number 2 (target station) to RUN.

[Structured ladder]



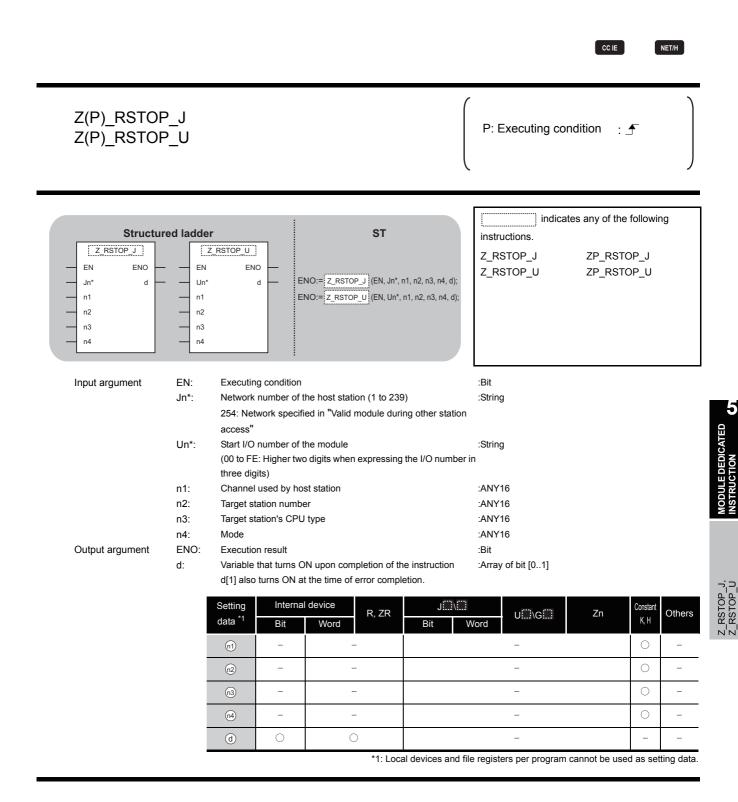
[ST]

IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN Z_RRUN_J(TRUE,"J1",K3,K2,H3FF,H1,Var_Result);(* Performs remote RUN *) END_IF;

IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)]
END_IF;	
END_IF;	
IF(SM400=TRUE)THEN MOV(TRUE,SW32,Var_ErrorCode); END_IF;	(* Stores error code *)

5.4.10 RSTOP instruction

Z_RSTOP_J, Z_RSTOP_U



Grant Function

This instruction remotely switches a CPU module on another station to STOP.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program remotely switches the QCPU on the station number 2 (target station) to STOP.

Var_Flaq_Exe · · ·SB47 · · SW0A0:1 · · · · · · ZP_RSTOP_J Performs remote -|| • ||----—[]/]|-— | / |-EN. ENO STOP ".[1"_ -Var_Result Jn* d · КЗ s1. . K2. s2 H3FF s3 H1 s4 2 Var_Result[0] -|| • ||-Process on completion Execution finished <u>. .</u> Var_Result[1] Process on normal completion Normal completion —]/ |-Var_Result[1] -|| · ||-Process on error completion Error completion MOV 3 Stores error code SM400 · · · · · · · · · · · · · · · EN ENO -|| · ||-· · · · · · · · · · SW32___ s d

[Structured ladder]

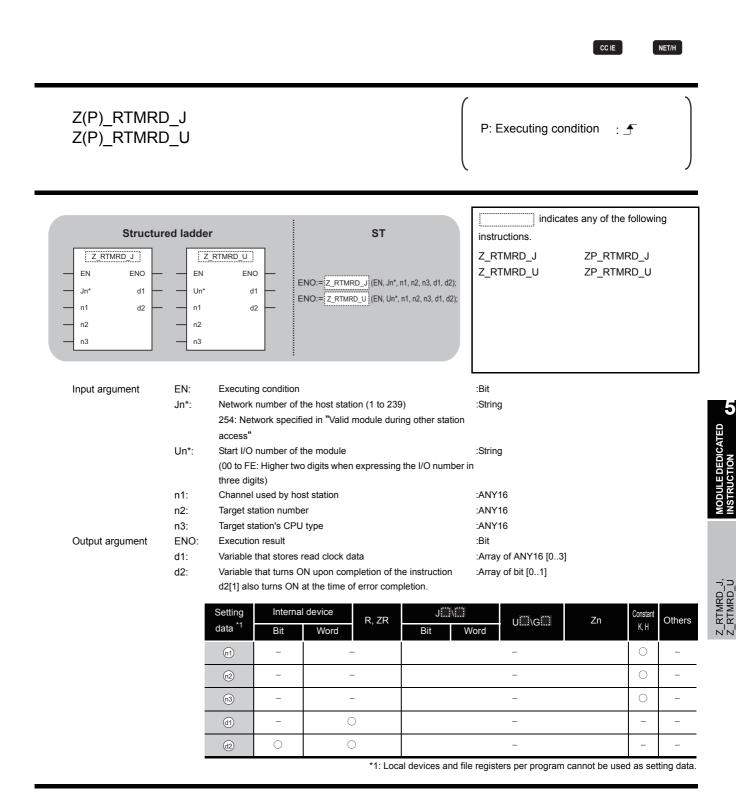
[ST]

IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN ZP_RSTOP_J(TRUE,"J1",K3,K2,H3FF,H1,Var_Result);(* Performs remote STOP *) END IF;

IF(Var_Result[0]=TRUE)THEN (* Execution finished *) _____ (* Process on completion *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Process on normal completion *) ELSE (* Error execution *) (* Process on error completion *) END IF; END_IF; IF(SM400=TRUE)THEN MOV(TRUE, SW32, Var_ErrorCode); (* Stores error code *) END IF;

5.4.11 RTMRD instruction

Z_RTMRD_J, Z_RTMRD_U



Grant Function

This instruction reads clock data from a CPU module on another station.

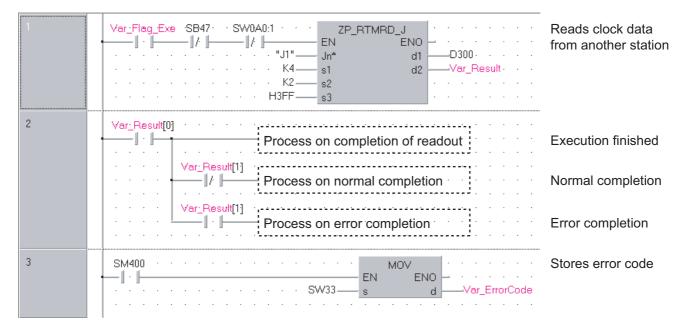
Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program reads out clock data from the QCPU on the station number 2 (target station) and stores the clock data in the station number 1 (host station).

[Structured ladder]



[ST]

IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN ZP_RTMRD_J(TRUE,"J1",K4,K2,H3FF,D300,Var_Result); (* Reads clock data from another station *)

END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) (* Process on completion of readout *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) * Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *) END IF; END IF; IF(SM400=TRUE)THEN MOV(TRUE, SW33, Var_ErrorCode); (* Stores error code *) END IF;

5.4.12 RTMWR instruction

Z_RTMWR_J, Z_RTMWR_U

						l	NET/H
Z(P)_RTMW Z(P)_RTMW					P: Executing con	dition : 于	
Structur EN ENO Jn* d1 n1 d2 n2 n3	red ladder EN Un* n1 n2 n3	RTMWR_U ENO d1 d2	ST ENO:= Z_RTMWR_J (EN ENO:= Z_RTMWR_U (EN	√, Jn*, n1, n2, n3, d1, d2);	instructions. Z_RTMWR_J Z_RTMWR_U	es any of the followin ZP_RTMWR_J ZP_RTMWR_U	ng
Input argument	EN: Jn*:		lition er of the host station (1 te pecified in "Valid module		:Bit :String		
	Un*:	Start I/O numbe (00 to FE: Highe	er of the module er two digits when expres	ssing the I/O number	:String in		
	n1:	three digits) Channel used b	by host station		:ANY16		
	n2:	Target station n	umber		:ANY16		
	n3:	Target station's			:ANY16		
Output argument	ENO:	Execution result			:Bit		
	d1: d2:	Variable that tu	ores write clock data rns ON upon completion s ON at the time of error		:Array of ANY16 [04] :Array of bit [01]		
		Setting Int data ^{*1} Bi	ternal device R, Z			Zn Constant K, H	Othe
		(n1) -			_	0	_
		····	_		_	0	_
	-		_		_	0	-
		d1 -			_		_
	_						
		d2 C			le registers per program o	_	

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction writes clock data to a CPU module on another station.

MODULE DEDICATED NSTRUCTION **G**

Z_RTMWR_J, Z_RTMWR_U

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program writes the clock data (8:30:00) to all stations on the network number 1. [Structured ladder]

1	· Var_Flag_Inst EN ENO H38 S d -Var_ClockData[0] · Var_Flag_Inst · H38 · H38 · H38 · · · · · · · · · · · · · · · · · · ·	Sets clock data
2	Var_Flag_Exe SB47 SB0A0 ZP_RTMWR_J I I/I I/I EN ENO J I/I I/I Jn* I/I Var_Result S1 I/I I/I S1 S1 S1 I/III Var_ClockData S4 S4	Writes clock data to other stations
3	Var_Result[0] Process on completion of writing Var_Result[1] Process on normal completion Var_Result[1] Process on error completion	Execution finished Normal completion Error completion
4	SM400 MOV SM400 EN EN ENO SW34 s d Var_ErrorCode	Stores error code

```
[ST]
IF(LDP(TRUE,Var_Flag_Inst))THEN
   MOV(TRUE,H38,Var_ClockData[0]); (* Sets clock data *)
   MOV(TRUE,H0,Var_ClockData[1]);
   MOV(TRUE,H8,Var ClockData[2]);
   MOV(TRUE,H3000,Var ClockData[3]);
   MOV(TRUE,H0,Var_ClockData[4]);
END IF;
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SB0A0=FALSE)) THEN
   ZP_RTMWR_J(TRUE,"J1",K5,H0FF,H3FF,Var_ClockData,Var_Result);
                               (* Writes clock data to other stations*)
END IF;
IF(Var_Result[0]=TRUE)THEN (* Execution finished *)
        .....
    (* Process on completion of writing *)
                               ,
   IF(Var_Result[1]=FALSE)THEN (* Normal completion *)
               -----
         (* Process on normal completion *)
                                   -----
   ELSE
                            (* Error completion *)
              -----
        (* Process on error completion *)
   END IF;
END IF;
IF(SM400=TRUE)THEN
   MOV(TRUE, SW34, Var_ErrorCode);(* Stores error code *)
END_IF;
```

5.4.13 REMFR instruction

Z_REMFR

NET/H

Z(P)_REMF	R				P: Executing cor	ndition :	£	
	red ladder EEMFR d1 d2	ENO:= Z.REMFR (E	ST :N, Jn*, n1, n2, n3, n4, n5, d1, d2)	5	indicat instructions. Z_REMFR	es any of the		g
Input argument	Jn*: Networ n1: Chann n2: Target n3: Start l/ Specifi numbe target t n4: Read t Specifi destina	es the higher thre r for the intelligen remote I/O station ouffer memory sta es the start addre ation intelligent fur	arget intelligent funct te digits when expres it function module mo in four digits. irt address ess of the buffer mem- inction module.	sing the I/O unted to the	:Bit :String :ANY16 :ANY16 :ANY16 :ANY16			
Output argument	ENO: Execut d1: Start n Specifi stores d2: Variable	es the start numb read data. e that turns ON u	in units of words) ce that stores read da er of the host station' pon completion of the ne time of error compl	s device that e instruction	:ANY16 :Bit :ANY16 :Array of bit [01]			
	Setting data *1 n1 n2 n3	- · · ·	Word R, 2R	JIII N	U::::\G::: - - -	Zn	Constant K, H O	Others - -
	(n4) (n5)	-	0				0	

*1: Local devices and file registers per program cannot be used as setting data.

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d1)

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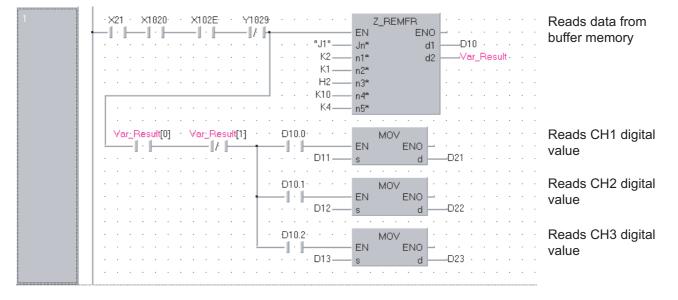
Grant Function

This instruction reads data from the buffer memory of an intelligent function module on the remote I/O station.

Program Example

The following program reads digital output values.

[Structured ladder]



[ST]

IF((X21=TRUE) AND (X1020=TRUE) AND (X102E=TRUE) AND (Y1029=FALSE))THEN Z_REMFR(TRUE,"J1",K2,K1,H2,K10,K4,D10,Var_Result); (* Reads data from buffer memory *) (*Reads digital values of CH1 to CH3 at once*) IF((Var_Result[0]=TRUE) AND (Var_Result[1]=FALSE))THEN IF(D10.0=TRUE)THEN MOV(TRUE,D11,D21); (* Reads CH1 digital output value *) END IF; IF(D10.1=TRUE)THEN MOV(TRUE, D12, D22); (* Reads CH2 digital output value *) END IF; IF(D10.2=TRUE)THEN MOV(TRUE, D13, D23); (* Reads CH3 digital output value *) END_IF; END_IF;

END_IF;

5.4.14 REMTO instruction

Z_REMTO

NET/H

Z(P)_REMT	0				P: Executing con	dition : 🛧	
	EMTO ENO d1 d2	ENO:=Z.REMIC	ST (EN, Jn*, n1, n2, n3, n4, n5, d1, d2);		indicate instructions. Z_REMTO	es any of the followi	ng
Input argument	Jn*: n1: n3: n4:	Specifies the higher to number for the intelli target remote I/O sta Write buffer memory	er ne target intelligent functio three digits when express gent function module mou tion in four digits.	ing the I/O inted to the	:Bit :String :ANY16 :ANY16 :ANY16		
Output argument	n5: ENO: d1: d2:	Specifies the start nu stores write data. Variable that turns O		device that instruction	:ANY16 :Bit) :ANY16 :Array of bit [01]		
		Setting data ¹¹ Bit n1 - n2 - n3 - n4 -	Word R, 2R	Jiii W	/ord	Zn Constant K, H C C C C C C C C C	Others
	-	(n5) – (d1) –	0		-	-	-

*1: Local devices and file registers per program cannot be used as setting data.

 \bigcirc

 \bigcirc

Grant Function

This instruction writes data to the buffer memory of an intelligent function module on the remote I/ O station.

Program Example

The following program makes the A/D conversion enable setting on channels.

A/D Conversion Var_Flag_Inst MOV enable/disable ΕN ENO Ŀ setting H8-D0 s d CH2 time/count MOV ΕN ENO averaging setting D2 K50 s d CH3 time/count MOV ΕN ENO averaging setting K1000 s d D3 Averaging processing MOV ΕN ENO specification ·H604 -D9 d s Writes data to ZP REMTO ΕN ENO buffer memory "J1" d1 -D0 Jn* К1 -Var_Result n1* d2 К1 n2* H2 n3* HO n4* K10 n5* 2 Turns operating Var_Result[0] Var_Result[1] SET - || · ||-- | / |-ΕN ENO condition setting Y1029 request (Y9) ON d 3 Y1029 · · · X1829 Turns operating RST - || • ||-- | / |-ΕN ENO condition setting request (Y9) OFF -Y1029 d

[Structured ladder]

[ST] IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE,H8,D0); (* A/D Conversion enable/disable setting *) MOV(TRUE,K50,D2); (* CH2 time/count averaging setting *) MOV(TRUE,K1000,D3); (* CH3 time/count averaging setting *) MOV(TRUE,H604,D9); (* Averaging processing specification *) ZP REMTO(TRUE,"J1",K1,K1,H2,H0,K10,D0,Var Result); (* Writes data to buffer memory *) END IF; IF((Var_Result[0]=TRUE) AND (Var_Result[1]=FALSE))THEN SET(TRUE,Y1029); (* Turns operating condition setting request (Y9) ON *) END IF; IF((Y1029=TRUE) AND (X1029=FALSE))THEN RST(TRUE,Y1029); (* Turns operating condition setting request (Y9) OFF *) END_IF;

ZP_OPEN

E71

5.4.15 OPEN instruction

ZP_OPEN				Executing condition	: _f
	<u>PPEN</u>	_	T (EN, Un*, s1, s2, d);	ZP_OPEN	e following instruction.
Input argument	EN: Un*:	Executing condition Start I/O number of the m (00 to FE: Higher two digi	odule s when expressing the I/O nur	:Bit :String mber in	
		three digits)			
	s1: s2:	Connection number (1 to Variable that stores control	·	:ANY16 :Array of ANY16 [09]	
	52.		Ji uala	Anay of ANT to [09]	
Output argument	ENO.	Execution result		:Bit	
Output argument	ENO: d:	Execution result Variable that turns ON up d[1] also turns ON at the	on completion of the instructio	:Bit on :Array of bit [01]	
Output argument		Variable that turns ON up d[1] also turns ON at the Setting Internal devi	time of error completion.	on :Array of bit [01]	Zn Constant K, H Othe
Output argument		Variable that turns ON up d[1] also turns ON at the Setting data *1 Bit W	time of error completion.	on :Array of bit [01]	/n ()the
Output argument		Variable that turns ON up d[1] also turns ON at the Setting data *1 Bit W	ime of error completion. ce R, ZR J: /ord Bit	on :Array of bit [01]	Zn K,H Othe

Grant Function

This instruction establishes (opens) a connection with external device for data communication.

Control Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
€2 [0]	Execution type/ Completion type	Specify whether to use the parameter values set by GX Works2 or the setting values of the following control data (@[2] to @[9]) at open processing of a connection. 0000H: Uses the parameter set in [Open settings] of GX Works2. 8000H: Uses the settings of control data @[2] to @[9].	0000н, 8000н	User
@[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
€ [2]	Application setting area	Specify the application of connection.	(See the left column.)	User
⊚[3]	Host station port No.	Specify the port number of the host station.	407н to 1387н, 138Вн to FFFEн	User
@ [4] @ [5]	Destination IP address	Specify the IP address of the external device.	1н to FFFFFFFн (FFFFFFFFн: broadcast)	User
€ [6]	Destination port No.	Specify the port number of the external device.	401н to FFFFн (FFFFн: broadcast)	User
© [7] to © [9]	Destination Ethernet address	Specify the Ethernet address of the external device.	n 000000000000 FFFFFFFFFFF	User

Program Example

The following program opens the connection 1 for TCP/IP communication using the Active open process.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder]

1	SM400 SM400 U0\G20480 SM400 SM0V EN EN EN CMOV S CMOV S CMOV S CMOV S CMOV S CMOV S CMOV S CMOV S CMOV S CMOV S CMOV S CMOV CMOV S CMOV	Open request signal Connection 1 open request signal
2	Var_Flag_Inst PLS · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·	Turns execution flag ON when instruction flag is ON
3	Var_Flag_Exe ×19 M0 M20 H0 EN ENO I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I<	Execution type when GX Works2- [Open settings] is used Execution type when D100-[control data] is used Application setting Host station port number
	· · · · · · · · · · · · · · · · · · ·	Destination IP address Destination port number
	ZP_OPEN EN EN EN Un S1 S2	Opens connection
4	Var_Result[0] Var_Result[1] SET I I I Var_Result[1] EN EN EN Var_Flag_Normal Var_Flag_Normal Var_Result[1] Var_Flag_Normal Var_Result[1] Var_Flag_Error	Turns normal completion flag ON Turns error completion flag ON

*1: For divisions of ① and ② in the program, ① is necessary when the [Open settings] of GX Works2 is used and ③ is necessary when it is not used.

5-197

```
[ST]
IF(SM400=TRUE)THEN
               (* Always ON *)
    MOV(TRUE,U0\G20480,K4M0);
               (* Open completed signal/connection 1 open completion signal *)
    MOV(TRUE,U0\G20482,K4M20);
               (* Open request signal/connection 1 open request signal *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                                 (* When instruction flag is ON*)
    PLS(TRUE,Var_Flag_Exe);
                                 (* Turns execution flag ON *)
END IF;
IF((Var_Flag_Exe=TRUE) AND (X19=TRUE)
                           (* Execution flag/initialization normal completion signal *)
     AND (M0=FALSE) AND (M20=FALSE))THEN
          (* Connection 1 open completion signal/connection 1 open request signal *)
                    (1)*1
                       (*Use GX Works2-[Open settings]*)
               MOVP(TRUE,H0,D100);
                      (*Execution type*)
                      (2)*1
                       (*Use D100-[control data]*)
               MOVP(TRUE, H8000, D100);
                       (*Execution type*)
               MOVP(TRUE,H0,D102);
                       (*Application setting*)
               MOVP(TRUE,H1000,D103);
                       (*Host station port number*)
               DMOVP(TRUE,H0A6155DF,D104);
                       (*Destination IP address*)
                MOVP(TRUE,H2000,D106);
                       (*Destination port number*)
          ZP OPEN(TRUE,"U0",K1,D100,Var Result);
                                            (* Opens connection *)
END IF;
IF(Var_Result[0]=TRUE)THEN
                                            (* Execution finished *)
    IF(Var Result[1]=FALSE)THEN
                                            (* Normal completion *)
          SET(TRUE, Var Flag Normal);
                                            (* Turns normal completion flag ON *)
    END IF;
    IF(Var_Result[1]=TRUE)THEN
                                            (* Error completion *)
                                            (* Turns error completion flag ON *)
          SET(TRUE, Var Flag Error);
    END IF;
END IF;
```

*1: For devisions of ① and ② in the program, ① is necessary when the [Open settings] of GX Works2 is used and ② is necessary when it is not used.

5.4.16 CLOSE instruction

ZP_CLOSE			Executing condition : _
	CLOSE ENO d	r ST ENO:= ZP_CLOSE (EN, Un*, s1, s2	ZP_CLOSE
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expres three digits)	:Bit :String sing the I/O number in
	s1:	Connection number (1 to 16)	:ANY16
	s2:	Variable that stores control data	:Array of ANY16 [01]
Output argument	ENO: d:	Execution result Variable that turns ON upon completion d[1] also turns ON at the time of error co	
		Setting Internal device R, Z data ^{*1} Bit Word	R JIII UIII\GIII Zn Constant K, H
		st - O	- O
	-	<u>s</u> - O	
		(SZ)	

Grant Function

This instruction shuts off (closes) a connection with external device during data communication.

Control Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
s2 [0]	System area	-	-	-
⊚[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

ZP_CLOSE

Program Example

The following program closes the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder]

1	·Var_Flag_Open · · · · · · · · · · · · · · · · · · ·	Connection 1 close timing
2	·Var_Flag_CloseTiming · · Var_Flag_OpenOK · PLS · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·	Closing connection 1 from external device
3	Var_Flag_Inst PLS Image: Inst Image: Inst Image: Image: Inst Image: Image	Close instruction 1PLS
4	Var_Flag_Inst2 Var_Flag_Open ZP_CLOSE Image: Second se	Closes connection Turns execution flag ON
5	Var_Result[0] Var_Result[1] Image: second	Turns normal completion flag ON Turns error completion flag ON Turns execution flag OFF

```
[ST]
IF(Var_Flag_Open=TRUE)THEN
                                        (* Connection 1 open completion signal *)
    PLF(TRUE,Var_Flag_CloseTiming); (* Connection 1 close timing *)
END_IF;
IF((Var Flag CloseTiming=TRUE) AND (Var Flag OpenOK=TRUE))THEN
                      (* Connection 1 close timing/open instruction normal completion *)
    PLS(TRUE,Var_Flag_Close);
                                        (* Closing connection from external device *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                                        (* Close instruction *)
    PLS(TRUE,Var_Flag_Inst2);
                                        (* Close instruction 1PLS *)
END IF;
IF(((Var_Flag_Inst2=TRUE) AND (Var_Flag_Open=TRUE))
                      (* Close instruction 1PLS/connection 1 open completion signal *)
    OR ((Var Flag Close=TRUE) AND (Var Flag Exe=FALSE)))THEN
          (* Closing connection 1 from external device/CLOSE instruction is in execution *)
    ZP CLOSE(TRUE,"U0",K1,Var ControlData,Var Result);
                                        (* Closes connection *)
    SET(TRUE,Var_Flag_Exe);
                                        (* Turns execution flag ON *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                        (* Execution finished *)
                                        (* Normal completion *)
    IF(Var Result[1]=FALSE)THEN
          SET(TRUE, Var_Flag_Normal);(* Turns normal completion flag ON *)
    END_IF;
    IF(Var_Result[1]=TRUE)THEN
                                        (* Error completion *)
          SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *)
    END IF:
    RST(TRUE,Var_Flag_Exe);
                                        (* Turns execution flag OFF *)
END IF;
```

5.4.17 BUFRCV instruction

ZP_BUFRCV

F71

ZP_BUFRC	V		Executing condition :
			indicates the following instruct
	red ladder	ST	ZP_BUFRCV
EN	BUFRCV ENO		
Un*	d1 -	ENO:= ZP_BUFRCV (EN, Un*, s1, s2, d1, d2);	
— s1	d2 -	-	
s2			
Input argument	EN:	Executing condition	:Bit
	Un*:	Start I/O number of the module	:String
		(00 to FE: Higher two digits when expressing the I/O number	er in
		three digits) Connection number (1 to 16)	:ANY16
	s1:		
	s1: s2:	Variable that stores control data	:Array of ANY16 [01]
Output argument		· ·	
Output argument	s2:	Variable that stores control data	:Array of ANY16 [01]
Output argument	s2: ENO:	Variable that stores control data Execution result Start number of the device that stores read data Variable that turns ON upon completion of the instruction	:Array of ANY16 [01] :Bit
Output argument	s2: ENO: d1:	Variable that stores control data Execution result Start number of the device that stores read data	:Array of ANY16 [01] :Bit :ANY16
Output argument	s2: ENO: d1:	Variable that stores control data Execution result Start number of the device that stores read data Variable that turns ON upon completion of the instruction	:Array of ANY16 [01] :Bit :ANY16 :Array of bit [01]

Setting	Internal device		R, ZR	J	J\		Zn	Constant	Others	
data ^{*1}	Bit	Word	,	Bit	Word	0		K, H		
(s1)	-	C)			-		0	-	
s2	-	C)			-		-	-	
(t)	Ι	C	\sim			_		-	-	
d2	0	C)			-		-	_	

*1: Local devices and file registers per program cannot be used as setting data.

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in a main program.

Control Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
s2 [0]	System area	-	-	-
@[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

Receive Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
@+0	System area	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of words Nonprocedural communication (communication in binary code):	- 1 to 1017 1 to 508	System
		The number of bytes	1 to 2046	
(d) +1 to (d) +n	Receive data	Data read from the fixed buffer data area are stored in ascending address order.	-	System

/Program Example

The following program reads out receive data from the fixed buffer of the connection 1. (The I/O signals of the Ethernet module are X/Y00 to X/Y1F) [Structured ladder]

1	SM400 · · · · · · · · · · · · · · · · · ·	- Connection 1 open completion signal
	· · · · · · · · · · · · · · · · · · ·	
	MOV EN EN ENO s d K4M20	Connection 1 open request signal
	MOV EN EN K4M40	Fixed buffer 1 receive status signal
2		
	· X19 · · · M0 · · · M40 · · · · M500 · · · · · · · PLS · · · · · · · · · · · · · · · · · · ·	Receive instruction 1 PLS
3	Var_Flag_Exe ZP_BUFRCV Image: Exe Image: Exe Image: Exe	Reads data in fixed buffer communication
4	Var_Result[0] Var_Result[1] Process on normal completion	Normal completion
	Var_Result[1] Process on error completion	Error completion

[ST] IF(SM400=TRUE)THEN (* Always ON *) MOV(TRUE,U0\G20480,K4M0); (* Open completion signal/connection 1 open completion signal *) MOV(TRUE,U0\G20482,K4M20); (* Open request signal/connection 1 open request signal *) MOV(TRUE,U0\G20485,K4M40); (* Fixed buffer receive status signal/fixed buffer 1 receive status signal *) END_IF; (* Program to receive fixed buffer number 1 (main program) *) IF((X19=TRUE) AND (M0=TRUE) AND (M40=TRUE) AND (M500=FALSE))THEN (* Initialization normal completion signal/connection 1 normal open completion signal *) (* Fixed buffer 1 receive status signal/receive instruction completion signal *) PLS(TRUE,Var_Flag_Exe); (* Receive instruction 1PLS *) END IF; IF(Var_Flag_Exe=TRUE)THEN (* Receive instruction 1PLS *) ZP_BUFRCV(TRUE,"U0",K1,Var_ControlData,D500,Var_Result); (* Reads data in fixed buffer communication *) END IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) Process on normal completion *) (* Error completion *) ELSE * Process on error completion *)

END_IF;

END_IF;

5.4.18 BUFRCVS instruction

Z_BUFRCVS



Z_BUFRCVS

Structur		ST				indicates the following instruction.					
- EN - Un* - s	ENO d	- е	NO:= Z_B	UFRCVS (EM	I, Un*, s, d);						
Input argument	EN:	Executing condition					:Bit				
	Un*:		Higher two	he module o digits whe	n expressing	the I/O number i	:String n	g			
	s:	Connection number (1 to 16)					:ANY16				
Output argument	ENO:	Execution result					:Bit				
	d:	Start number of the device that stores read data					:ANY	16			
		Setting data ^{*1}	Interna Bit	l device Word	R, ZR	J∰\∭ Bit V	Vord	U∭\G∭	Zn	Constant K, H	Others
	- I	S	-	(C			_		0	-

Grant Function

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in an interrupt program.

Receive Data

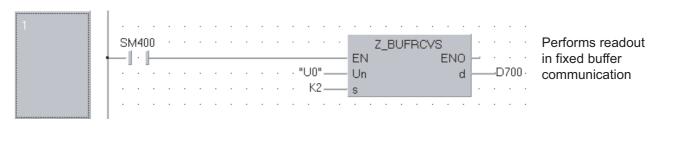
Device	Item	Setting data	Setting range	Setting side ^{*1}
(d) +0	Receive data length	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words	- 1 to 1017	System
		With procedure (communication in ASCII code): The number of words	1 to 508	
		Nonprocedural communication (communication in binary code): The number of bytes	1 to 2046	
(d) +1 to (d) +n	Receive data	Data read from the fixed buffer data area are stored in ascending address order.	_	System

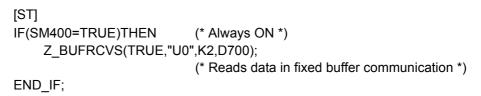
Program Example

The following program reads receive data from the fixed buffer of the connection 2.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder]





5.4.19 BUFSND instruction

ZP_BUFSND

E71 ZP BUFSND Executing condition : 🕈 indicates the following instruction. Structured ladder ST ZP_BUFSND ZP_BUFSND ΕN ENO ENO:= ZP_BUFSND (EN, Un*, s1, s2, s3, d1); Un* d1 s1 s2 s3 Input argument EN: Executing condition :Bit Un*: Start I/O number of the module :String (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Connection number (1 to 16) :ANY16 s2: Variable that stores control data :Array of ANY16 [0..1] s3: Start number of the device that stores write data :ANY16 Output argument ENO: Execution result :Bit d1: Variable that turns ON upon completion of the instruction :Array of bit [0..1] d[1] also turns ON at the time of error completion. Setting Internal device J \ Constant R, ZR Zn Others U...\G... data *1 Word Bit Word Bit (s1) _ _ _ (s2) _ \bigcirc _ _ **s**3 0 _ _ _ _ (d1) _ _ _ *1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in a main program.

Device	Item Setting data		Setting range	Setting side ^{*1}
s2 [0]	System area	-	-	-
€2[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

(1) Send data

Device	Item	Setting data	Setting range	Setting side ^{*1}
		Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of	-	
s3 +0	Send data length	With procedure (communication in ASCII code): The number of words	1 to 1017 1 to 508	User
		Nonprocedural communication (communication in binary code): The number of bytes	1 to 2046	
s3 +1 to s3 +n	Send data	Specify the send data.	_	User

/Program Example

The following program sends data from the fixed buffer of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder]

1	· · · X19 · · · Var_Flag_Open · · · · · · · · · · · · · · · · · · ·	Send instruction 1PLS
2	Var_Flag_Inst MOV Imag_Inst Imag_Inst	Sets data length (number of words)
	Image: Second	Sets send data
		Sends data in
	Image: Second	fixed buffer communication
3	Var_Result[0] Var_Result[1] Process on normal completion Var_Result[1] Process on error completion	Normal completion Error completion

```
[ST]
IF((X19=TRUE) AND (Var_Flag_Open=TRUE))THEN
     (* Initialization normal completion signal/connection 1 open completion signal*)
    PLS(TRUE,Var_Flag_Inst);
                (* Send instruction 1PLS *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                (* Send instruction 1PLS *)
    MOV(TRUE,K3,D300);
                (* Sets data length (number of words) *)
    MOV(TRUE,K1234,D301);
                (* Sets send data *)
    MOV(TRUE,K5678,D302);
                (* Sets send data *)
    MOV(TRUE,K8901,D303);
                (* Sets send data *)
    ZP BUFSND(TRUE,"U0",K1,Var ControlData,D300,Var Result);
                (* Sends data in fixed buffer communication *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                        (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                        (* Normal completion *)
              Process on normal completion *)
    ELSE
                                        (* Error completion *)
            (* Process on error completion *)
    END IF;
```

END_IF;

5.4.20 ERRCLR instruction

ZP_ERRCLR

				E71
ZP_ERRCLI	२			Executing condition :
	red ladde ERRCLR ENO d		ST 2P_ERRCLR (EN, Un*, s, d);	Image: Indicates the following instruction. ZP_ERRCLR
Input argument	EN: Un*:	Executing condit Start I/O number (00 to FE: Higher three digits)		:Bit :String ne I/O number in
Output argument	s: ENO: d:		es control data is ON upon completion of the N at the time of error complet	
		Setting Inte data *1 Bit	Trnal device R, ZR	JIII UIII GIII Zn Constant Others
		() () () () () () () () () () () () () (- devices and file registers per program cannot be used as setting dat

Grant Function

This instruction turns OFF the LED on Ethernet module and clears error information stored in the buffer memory.

Device	Item	Setting data	Setting range	Setting side ^{*1}
⑤[0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ি[2]	Clear target specification	Specify the error information to be cleared. 0000н: Initial error code 0001н to 0016н: Open error code of the corresponding connection 0100н: Error log block area 0101н: Communication status - Status by protocol 0102н: Communication status - E-mail reception status 0103н: Communication status - E-mail transmission status FFFFH: Clears all of the above.	(See the left column.)	User
ঙ [3]	Clear function specification	Specify the function to be cleared. 0000н: [COM.ERR] LED is turned OFF and an error code is cleared. FFFFн: Error log clear	0000н, FFFFн	User
\$[4] to \$[7]	System area	-	-	-

Program Example

The following program clears the open error code of the connection 1. (The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder]

1	Var_Flag_Inst Var_Flag_Exe MOVP I I EN ENO Var_ControlData[2] Var_ControlData[2]	Sets clear target
	MOVP EN ENO s dControlData[3]	Sets clear function
	EN ENO d Var_Flag_Exe	Turns execution flag ON
2	Var_Flag_Exe ZP_ERRCLR EN ENO Un - Var_ControlData s	Clears error information
3	Var_Result[0] Var_Result[1] I I K0 S d Var_ErrorCode	Normal completion Clears error code to 0
	····································	Error completion Stores error code
	· · · · · · · · · · · · · · · · · · · · · · · ·	Turns execution flag OFF

[ST]	
IF((Var_Flag_Inst=TRUE) AND (Var_Flag_Exe=F	ALSE))THEN
MOVP(TRUE,H1,Var_ControlData[2]);	(* Sets clear target *)
MOVP(TRUE,H0,Var_ControlData[3]);	(* Sets clear function *)
SET(TRUE,Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Flag_Exe=TRUE)THEN	
ZP_ERRCLR(TRUE,"U0",Var_ControlData,V	/ar_Result);
	(* Clears error information *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
MOVP(TRUE,K0,Var_ErrorCode);	(* Clears error code to 0 *)
END_IF;	
IF(Var_Result[1]=TRUE)THEN	(* Error completion *)
MOVP(TRUE,Var_ControlData[1],Var	_ErrorCode);(* Stores error code *)
END_IF;	
RST(TRUE,Var_Flag_Exe);	(* Turns execution flag OFF *)
END_IF;	

ZP_ERRRD

E71

5.4.21 ERRRD instruction

ZP_ERRRD			Executing condition :
	red ladder ERRRD ENO d	ST ENO:= <u>ZP_ERRRD</u> (EN, Un*, s, d);	ZP_ERRRD
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O nu	:Bit :String umber in
	s:	three digits) Variable that stores control data	:Array of ANY16 [07]
Output argument	ENO: d:	Execution result Variable that turns ON upon completion of the instructi d[1] also turns ON at the time of error completion.	:Bit ion :Array of bit [01]
Output argument	ENO:	Variable that turns ON upon completion of the instructid[1] also turns ON at the time of error completion.	

ZP_ERRRD

MODULE DEDICATED NSTRUCTION

Grant Function

This instruction reads the error information stored in the buffer memory of the Ethernet module.

Device	Item	Setting data	Setting range	Setting side ^{*1}
s [0]	System area	-	-	-
s[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	Read information specification	Specify the error information to be read. 0 : Initial error code 1 to 16 : Open error code of the corresponding connection	0, 1 to 16	User
<u>ি</u> [3]	Read target information specification	Specify the target error information to be read. 0000H: Latest error information	0000н	User
<u></u> জ[4]	Error information	The read error information is stored. 0000н : No error Other than 0000н : Error code	-	System
\$[5] to \$[7]	System area	-	-	_

Program Example

The following program reads the open error code of the connection 1.

```
(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)
```

[Structured ladder]

1	LDP Var_Flag_Exe · · · · MOVP · · · · · · · · · · · · · · · · · · ·	Sets open error code
	·Var_Flag_Inst ····· MOVP ···· EN ENO ···· H0 s d	Sets latest error information
	EN ENO d	Turns execution flag ON
2	Var_Flag_Exe ZP_ERRD	Reads error information
3	Var_Result[0] Var_Result[1] MOVP EN ENO	Normal completion Stores error information
	Var_Result[1] MOVP EN EN Var_ControlData[1] s d Var_ErrorCode	Error completion Stores error code
	EN ENO d Var_Flag_Exe	Turns execution flag OFF

```
[ST]
IF((LDP(TRUE,Var_Flag_Inst)=TRUE) AND (Var_Flag_Exe=FALSE))THEN
    MOVP(TRUE,H1,Var_ControlData[2]);
                (* Sets open error code of connection number 1 *)
    MOVP(TRUE,H0,Var ControlData[3]);
                (* Sets latest error information *)
    SET(TRUE,Var_Flag_Exe);
                                 (* Turns execution flag ON*)
END IF;
IF(Var_Flag_Exe=TRUE)THEN
    ZP_ERRRD(TRUE,"U0",Var_ControlData,Var_Result);
                                  (* Reads error information *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                  (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
          MOVP(TRUE,Var_ControlData[4],Var_ErrorInfo);
                                  (* Stores error information*)
    END IF;
    IF(Var_Result[1]=TRUE)THEN (* Error completion *)
          MOVP(TRUE,Var_ControlData[1],Var_ErrorCode);
                                  (* Stores error code *)
    END IF;
    RST(TRUE,Var_Flag_Exe);
                                  (* Turns execution flag OFF *)
END_IF;
```

5.4.22 UINI instruction

Z_UINI

						CC IE E71
Z(P)_UINI					P: Executing cond	dition : 🛧)
	red ladde		ST Z_UINI (EN, Un*, s, d);		indicate instructions. Z_UINI	rs any of the following
Input argument	EN: Un*: s: ENO: d:	three digits) Variable that store Execution result Variable that turns	f the module wo digits when expressin	the instruction	:Bit :String in :Array of ANY16 [05] :Bit :Array of bit [01]	
		Setting data *1 Bit s - d O	Word R, ZR	Jiii\iii Bit	U:::\G::: Nord - -	Zn Constant Others

*1: Local devices and file registers per program cannot be used as setting data.

Gamma Function

Ethernet: This instruction reinitializes the Ethernet module.

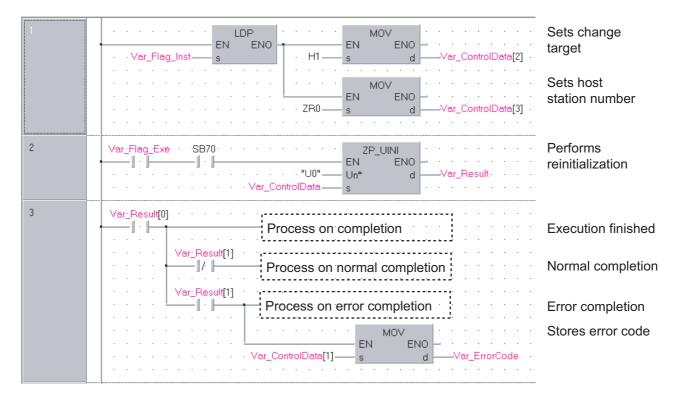
CC-Link IE controller network: This instruction sets the station number of the CC-Link IE controller network module on host station.

Device	Item	Setting data	Setting range	Setting side ^{*1}
S[0]	System area	-	-	_
⑤[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2]	Modification specification	Ethernet Specify the parameter to be modified.	Он to Зн	User
ি[3]	Host station No. (CC-Link IE controller	Specify the change target. 0001H: With station number setting Specify the station number of the host station.	0001н 1 to 120	User
\$[3] \$[4]	network only) Host station IP address (Ethernet only)	Specify the IP address of the host station.	00000001н to FFFFFFEн	User
ঙ [5]	Operation setting (Ethernet only)	Specify the operation setting. b15 to b9 b6 b7 b6 b5 b4 b3 b2 b1 b0 1 Communication data code setting 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(See the left column.)	User

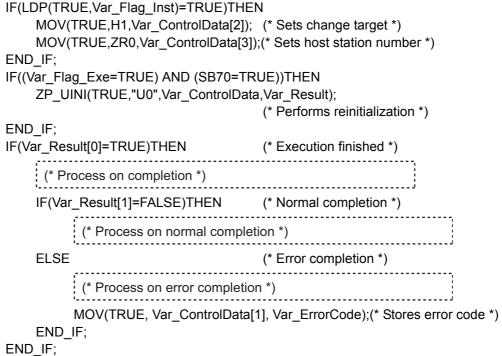
Program Example

The following program sets the station number 2.

[Structured ladder]



[ST]



ZP_MRECV

E71

5.4.23 MRECV instruction

ZP_MRECV Structure	ed ladder				Executing condition :
Structure	d ladder				
EN Un* s		ENO:=	ST (EN, Un*, s, d1, d2));	indicates the following instruction ZP_MRECV
Input argument	Un*: Start I/C	ng condition) number of t E: Higher two	he module o digits when expressing	the I/O number i	Bit :String in
Output argument	ENO: Executi d1: Start nu content d2: Variable	e that stores of on result mber of the h s of the receive that turns O	control data nost station's device that ved e-mail (header + att N upon completion of th at the time of error comp	tached file) ne instruction	:Array of ANY16 [015] :Bit :ANY16 :Array of bit [01]
	Setting data *1 s	Internal Bit –	device R, ZR	JEII\EII Bit V	UIII\GIII Zn Constant Othe
	d1 d2	-	0		-

Grant Function

This instruction reads received e-mail.

5

Device	lte	em	Setting data	Setting range	Setting side ^{*1}
© [0]	Execution/Erro	or completion	b15 to b10 b9 b8 b7 to b0 0 2 0 1 0 0 ① Execution type (bit 9) *2 Specify whether to inquire about existence of mails in the server after reading received mails. 0: Not requested (not read) 1: Requested (read) 2 Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0: Clock data at the time of error completion is not set in the area starting from (§ [11]. 1: Clock data at the time of error completion is set in the area starting from (§ [11]. 1:	0000н, 0080н, 0200н, 0280н	User
ঙ[1]	Completion st	atus	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	E-mail No. to	be read	Specify the number of a mail to be read when multiple mails are received. 0 : First mail 1 or more : Specified mail	0 or more	User
⑤ [3] to ⑥ [8]	System area	_	_	_	-
େ [9]	At instruction	instruction	Specify the data length (header + attached file) of the mail that can be stored in (1) to (1) +n. (Header: 1 to 373, attached file: 1 to 6144) 0 : Adjust data length to that of the received mail. 1 to 6517 : The number of data that can be stored in ((1) to (1) + n)	0 to 6517 (word) * Includes the header length	User
		At instruction completion	Data length (header + attached file) of the mail stored in (1) to (1) + n is stored. 1 to 6517: The number of receive data stored in ((1) to (1) + n)	below.	System
জ [10]	Header length	For instruction execution	Specify the header data length of the mail that can be stored in (d) to (d) + n. 0 : Adjust header data length to that of the received mail. 1 to 373 : The number of data that can be stored in (d) to (d) + n)	0 to 373 (word)	User
		At instruction completion	Header data length of the mail stored in (d) to (d) + n is stored. 1 to 373: Number of receive data stored in ((d) to (d) + n)		System
ঙ [11]	Clock set flag		Valid/invalid status of the data in the area starting from (§) [12] is stored. 0: Invalid 1: Valid	0,1	System

Device	Item	Setting data	Setting range	Setting side ^{*1}
\$[12] to \$[15]	Clock data (set only when errors occur)	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (a) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b0 (b) [13] Hour (00H to 23H) Day (01H to 31H) b1 b1 (c) [14] Second (00H to 59H) Minute (00H to 59H) b1 b1 (c) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) D0H (Sun.) to 06H (Sat.)	-	System

Receive Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
(d1) +0 to	Receive data	Contents (header + attached file) of the received mail are stored.		System
d1 +n			_	System

*1: The following table shows the processing that depends on the selection of the execution type after executing the MRECV instruction.

Setting option	Processing	Advantage	Disadvantage
No request (not read)	 Only e-mail read processing from the mail server is performed. Inquiry (reading) for the information of received mails remaining in the mail server is performed after the time set in the GX Works2 parameter has elapsed. 	Unnecessary read processing is not performed when the mail server has no mail.	Even if mails remain in the mail server, they cannot be read immediately. Mails tend to be accumulated in the mail server.
Request (read)	 E-mail read processing from the mail server is performed. After the execution of the MRECV instruction, inquiry (read) processing for information on the received mails remaining in the mail server is performed. (Inquiry for receiving of a mail is made immediately.) 	Received mails stored in the mail server can be read in series.	Inquiries to the mail server are made more often. Internal processing of the module increases, which affects other internal processing to a certain degree.

/Program Example

The following program performs the e-mail receiving process by the receive instruction (X21). (The I/O signals of the Ethernet module are X/Y00 to X/Y1F) [Structured ladder]

1	LDP EN ENO X21 s d Var_Flag_Exe	
2	Var_Flag_Exe U0\G9858.F· MOVP I I I I I I I I I I I I	Sets to inquire to server
	MOVP MOVP K0 s K0 s	Sets to read the first mail
	MOVP EN EN S d	Sets to adjust data length to that of the received mail
	MOVP MOVP EN ENO s d	Sets to adjust header data length to that of the received mail
	ZP_MRECV EN U0" Un d1 D100 Var_ControlData s d2	Reads received e-mail
	· · · · · · · · · · · · · · · · · · ·	
3	Var_Result[0] Var_Result[1] Process on normal completion	Normal completion
	Var_Result[1]	Error completion

```
[ST]
IF(LDP(TRUE,X21)=TRUE)THEN
    SET(TRUE,Var_Flag_Exe);
END_IF;
IF((Var Flag Exe=TRUE) AND (U0\G9858.F=TRUE))THEN
    MOVP(TRUE,H200,Var ControlData[0]);
                (* Sets to inquire to server *)
    MOVP(TRUE,K0,Var_ControlData[2]);
                (* Sets to read the first mail *)
    MOVP(TRUE,K0,Var_ControlData[9]);
                (* Sets to adjust data length to that of the received mail *)
    MOVP(TRUE,K0,Var_ControlData[10]);
                (* Sets to adjust header data length to that of the received mail *)
    ZP_MRECV(TRUE,"U0",Var_ControlData,D100,Var_Result);
                (* Reads received e-mail *)
    RST(TRUE,Var_Flag_Exe);
END IF;
IF(Var_Result[0]=TRUE)THEN
                                        (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                        (* Normal completion *)
             * Process on normal completion *)
    ELSE
                                        (* Error completion *)
              Process on error completion *)
    END IF;
END_IF;
```

```
ODULE DEDICATED
```

5.4.24 MSEND instruction

ZP_MSEND

ZP_MSEND					Executing condition :
	red ladder MSEND ENO - d -	_	D:=	ST SEND (EN, Un*, s1, s2, d);	ZP_MSEND
Input argument	EN: Un*:		imber of t ligher two	he module digits when expressing the I/O numb	:Bit :String er in
	s1: s2:	contents of	at stores of the h	control data nost station's device that stores the e-mail (subject + attached file) or (sul	:Array of ANY16 [015] :ANY16 oject
	ENO:	+ text) Execution r	esult		:Bit
Output argument	d:			N upon completion of the instruction the time of error completion.	:Array of bit [01]
Output argument				the time of error completion.	
Output argument		d[1] also tu Setting	rns ON at	the time of error completion.	
Output argument		d[1] also tu Setting data ^{*1}	rns ON at Internal Bit	the time of error completion. device R, ZR Bit	

☆ Function

This instruction sends an e-mail.

Device	Item	Setting data	Setting range	Setting side ^{*1}
s) [0]	Execution/Error completion type Send data format	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	(See the left column.)	User
s1[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Transmission destination No.	Specify the external device to which e-mails are to be sent by the setting number on [Send mail address setting] of GX Works2. 1 to 16: Setting number of the external device	1 to 16	User
(s) [3] to (s) [8]	System area	_	-	-
ৱ্য [9]	Send data length	 Specify the data length ((subject + attached file) or (subject + text)) of the mail stored in ⁽²⁾ to ⁽²⁾ + n. ① Sending the data as an attached file (subject: 0 to 373, attached file: 1 to 6144) 1 to 6517: Data length (word) of a mail ② Sending the data as a text (subject: 0 to 373, text: 1 to 960) 1 to 1333: Data length (word) of a mail 	1 to 6517, 1 to 1333	User
s1 [10]	Subject length	Specify the subject data length of the mail stored in ⊚ to ⊚ + n. 0 to 373: Data length (word) of subject	0 to 373	User

Device	Item	Setting data	Setting range	Setting side ^{*1}
st)[11]	Clock set flag	Valid/invalid status of the data in the area starting from (a) [12] is stored. 0: Invalid 1: Valid	_	System
ৱণ [12] to ৱণ [15]	Clock data (set only when errors occur)	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (a) [12] Month (01H to 12H) Year (00H to 99H) Last two digits (a) [13] Hour (00H to 23H) Day (01H to 31H) (a) [14] Second (00H to 59H) Minute (00H to 59H) (a) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) (a) [15] Year (00H to 99H) First two digits Day of week (00H to 06H)	_	System

(1) Send data

Device	Item	Setting data	Setting range	Setting side ^{*1}
€2 +0 to €2 +n	Send data	Specify the contents of ((subject + attached file) or (Subject + text)) of a mail to be sent.	-	User

Program Example

The following program performs e-mail sending process by the send instruction (X20). (The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

(1) Sending the data as an attached file

	► X20 · · · · · · · · · · · · · · · · · · ·	Sets ASCII as send data format
	· · · · · · · · · · · · · · · · · · ·	
	MOVP	Sets transmission
	EN ENO - · · · · · · · ·	destination number
	· · · · · · · · · · · · · · · · · ·	
	MOVP	Sets send data
	EN ENO	length
		Sets subject length
	···· K7 s d Var_ControlData[10]···	
		Soto oubicat
	■ · · · · · · · · · · · · · · · · · · ·	Sets subject
	···· D200·····	
	MOVP	Sets file
	EN ENO	to be attached
	· · · · · · · · · · · · · · · · · ·	
	MOVP	
	EN ENO - · · · · · · · · · · · · · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·	
	□ · · · · · · · · · · · · · · · · · · ·	•
		Sondo o moil
		Sends e-mail
	· · · · · · · · · · · · · · · · · · ·	
	• • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •	
	· · · · · · · · · · · · · · · · · · ·	
2	Var_Result[0] Var_Result[1]	
	Process on normal completion	Normal completion
	Var <u>-</u> Result[1]	
	Process on error completion	Error completion

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE,H800,Var_ControlData[0]);
                             (* Sets ASCII as send data format *)
    MOVP(TRUE,K1,Var_ControlData[2]);
                             (* Sets transmission destination number *)
    MOVP(TRUE,K10,Var_ControlData[9]);
                             (* Sets send data length *)
    MOVP(TRUE,K7,Var_ControlData[10]);
                             (* Sets subject length *)
                             (* te *)
    Int_Msg[0] := H6574;
    Int_Msg[1] := H7473;
                             (* st *)
    Int_Msg[2] := H616d;
                             (* ma *)
                             (* il *)
    Int_Msg[3] := H6c69;
    Int_Msg[4] := H6d20;
                             (* m *)
    Int Msg[5] := H6573;
                             (* se *)
    Int_Msg[6] := H646e;
                             (* nd *)
                             (* Sets subject *)
    MOVP(TRUE,H1234,Int_Msg[7]);
                             (* Sets file to be attached *)
    MOVP(TRUE,H5678,Int_Msg[8]);
    MOVP(TRUE,H9ABC,Int_Msg[9]);
    ZP_MSEND(TRUE,"U0",Var_ControlData,Int_Msg[0],Var_Result);
                             (* Sends e-mail *)
END IF;
IF(Var_Result[0]=TRUE)THEN
                                   (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
              Process on normal completion *)
    ELSE
                                   (* Error completion *)
            (* Process on error completion *)
    END IF;
```

END_IF;

(2) Sending the data as a text [Structured ladder]

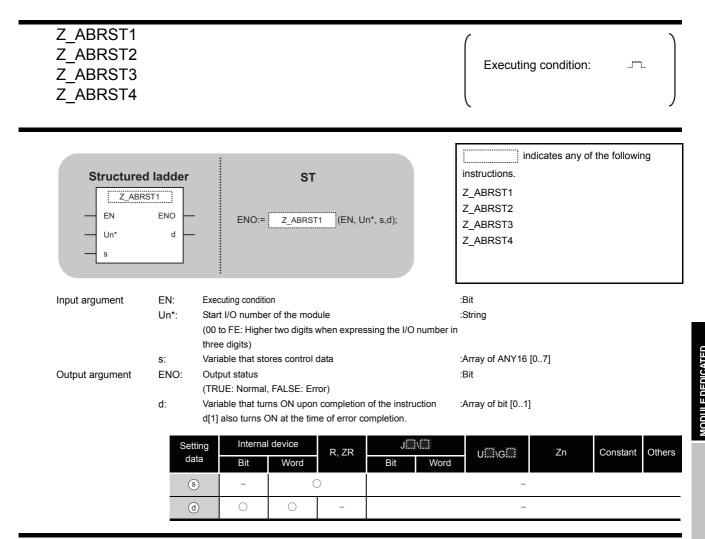
1	· ×20 · · · · · · · · · · · · · · · · · · ·	Sets text as send data format
	MOVP EN EN S d Var_ControlData[2]	Sets transmission destination number
	MOVP EN ENO s dVar_ControlData[9]	Sets send data length
	MOVP EN EN S d Var_ControlData[10]	Sets subject length
	\$MOVP EN ENO s d D200	Sets subject
	\$MOVP \$MOVP \$MOVP EN EN EN D207	Sets text
		Sends e-mail
	· · · · · · · · · · · · · · · · · · ·	
2	Var_Result[0] Var_Result[1] Process on normal completion Var_Result[1] Process on error completion	Normal completion Error completion

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE,H1000,Var_ControlData[0]);
                 (* Sets text as send data format *)
    MOVP(TRUE,K1,Var_ControlData[2]);
                 (* Sets transmission destination number *)
    MOVP(TRUE,K16,Var_ControlData[9]);
                 (* Sets send data length *)
    MOVP(TRUE,K7,Var_ControlData[10]);
                 (* Sets subject length *)
                             (* te *)
     Int_Msg[0] := H6574;
    Int_Msg[1] := H7473;
                             (* st *)
     Int_Msg[2] := H616d;
                             (* ma *)
                             (* il *)
     Int_Msg[3] := H6c69;
    Int_Msg[4] := H6d20;
                             (* m *)
     Int Msg[5] := H6573;
                             (* se *)
     Int_Msg[6] := H646e;
                             (* nd *)
                             (* Sets subject *)
    Int_Msg[7] := H7274;
                             (* Er *)
     Int_Msg[8] := H6f72;
                             (* ro *)
                             (* r *)
    Int_Msg[9] := H2072;
    Int_Msg[10] := H614d;
                             (* Ma *)
    Int_Msg[11] := H6863;
                             (* ch *)
    Int_Msg[12] := H6e69;
                             (* in *)
    Int_Msg[13] := H3165;
                             (* e1 *)
                             (* 0 *)
     Int_Msg[14] := H3020;
    Int_Msg[15] := H3130;
                             (* 01 *)
                             (* Sets text *)
    ZP_MSEND(TRUE,"U0",Var_ControlData,Int_Msg[0],Var_Result);
                             (* Sends e-mail *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                    (* Execution finished *)
     IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
              Process on normal completion *)
    ELSE
                                    (* Error completion *)
                                      -----
              Process on error completion *)
     END IF;
END_IF;
```

5.5 Positioning Instruction

5.5.1 ABRST instruction

Z_ABRST1



Grant Function

This instruction restores the absolute position of the specified axis. (Refer to the following)

- Z_ABRST1: Axis 1
- Z_ABRST2: Axis 2
- Z_ABRST3: Axis 3
- Z_ABRST4: Axis 4

Device	Item	Setting data	Setting range	Setting side ^{*1}
s [0]	System area	-	-	-
s [1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	_	System
ঙ [2]	Receive signal from servo amplifier	 Write the following signal status read from the servo amplifier to the input module. b0: ABS data bit0 b1: ABS data bit1 b2: Send data READY flag 	b0: 0/1 b1: 0/1 b2: 0/1	User
ঙ [3]	Send signal to servo amplifier	The ON/OFF status of the following data, that are calculated by the dedicated instructions on the basis of "receive signal from servo amplifier" and output to the amplifier, are stored. • b0: Servo ON • b1: ABS transfer mode • b2: ABS request flag	1 to 600	System
ঙ [4]	Status	Communication status with the servo amplifier • 0 : Communication completed (Set by the user at the start of communication) • Other than 0: During communication (Stored by the system.)	0	User/ System
\$ [5] to \$ [7]	System area	_	_	_

Program Example

The following program restores the absolute position of the axis 1.

The devices from X47 to X49 and from Y50 to Y52 are used for the communication with the servo amplifier.

X47: ABS data bit0

- X48: ABS data bit1
- X49: Send data READY flag
- Y50: Servo ON
- Y51: ABS transfer mode
- Y52: ABS request flag

[Structured ladder]

1	SM400 SM400 <td< th=""><th>Absolute position restoration pulse</th></td<>	Absolute position restoration pulse
2	Var_Flag_inst X0 SET I I/I EN EN Var_Flag_Mem I/I I/I	Turns absolute position restoration memory ON
	MOV EN S d Wov EN S d Var_ControlData[4]	Clears completion status
3	Var_Result[0] Var_Result[1] MOV Image: Move and the second seco	Turns the servo ON with the data to be sent to the servo amplifier
	····· ····· ······ MOV ····· ····· EN ENO ····· ····· ······ ······ ····· ····· ······ ······ ····· ····· ······ ······· ····· ····· ······ ······ ····· ······ ······ ······ ····· ······ ······ ········ ····· ······ ······ ······· ····· ······ ········ ······· ····· ······ ········· ················	Sets completion status to error code
	AND= RST EN EN S1 S1 S2 S1	Turns absolute position restoration memory OFF
4	Var_Flag_Mem X47 BSET EN ENO	Sets ABS data Sets ABS data in data b0 received from the servo
	· · · · · · · · · · · · · · · · · · ·	Sets ABS data in data b1
	X49 BSET EN ENO N d Var_ControlData[2]	Sets send data ready flag in data b2
		Restores absolute position

[ST] IPLS(SM400, Var_Flag_Inst); (* Absolute position restoration pulse *) IF((Var_Flag_Inst=TRUE) & (X0=FALSE))THEN SET(TRUE, Var Flag Mem); (* Turns absolute position restoration memory ON *) (* Clears completion status *) MOV(TRUE, 0, Var_ControlData[4]); END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) MOV(TRUE, Var ControlData[3], K1Y50); (* Turns the servo ON with the data to be sent to the servo amplifier *) ELSE (* Error completion *) MOV(TRUE, Var_ControlData[4], Var_ErrorCode); (* Sets completion status to error code *) END_IF; IF(Var_ControlData[4]=0)THEN RST(TRUE, Var_Flag_Mem); (* Turns absolute position restoration memory OFF *) END IF; END IF; IF(Var_Flag_Mem=TRUE)THEN (* absolute position restoration memory ON *) (* Sets ABS data *) BSET(X47, 0, Var_ControlData[2]); (* Sets ABS data in data b0 received from the servo *) BSET(X48, 1, Var_ControlData[2]); (* Sets ABS data in data b1 received from the servo *) BSET(X49, 2, Var_ControlData[2]); (* Sets send data ready flag in data b2 received from the servo *) Z_ABRST1(TRUE, "00", Var_ControlData, Var_Result); (* Restores absolute position *)

END_IF;

5.5.2 PSTRT instruction

ZP_PSTRT1

ZP_PSTRT1 ZP_PSTRT2 ZP_PSTRT3 ZP_PSTRT4		Executing condition :
Structured ZP_PS EN Un* s		instructions. ZP_PSTRT1 ZP_PSTRT2 ZP_PSTRT3 ZP_PSTRT4
Input argument	EN: Executing condition Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O three digits)	:Bit :String) number in
Output argument	 S: Variable that stores control data ENO: Output status (TRUE: Normal, FALSE: Error) d: Variable that turns ON upon completion of the instrud[1] also turns ON at the time of error completion. 	:Array of ANY16 [02] :Bit uction :Array of bit [01]
	Setting dataInternal deviceR, ZRJiiiiBitWordR, ZRBit©@OO-	Word UIII\GIII Zn Constant Others

Grant Function

This instruction starts positioning of the specified axis. (Refer to the following.)

- ZP_PSTRT1: Axis 1
- ZP_PSTRT2: Axis 2
- ZP_PSTRT3: Axis 3
- ZP_PSTRT4: Axis 4

5

E DEDICATED

Device	Item	Setting data	Setting range	Setting side ^{*1}
s [0]	System area	-	-	-
s [1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	_	System
ঙ [2]	Start No.	Specify the following data number to be started by the PSTRT instruction. 1 to 600 : Positioning data number 7000 to 7004 : Block start 9001 : Machine OPR 9002 : Fast OPR 9003 : Current value change 9004 : Multiple axes concurrent start	1 to 600, 7000 to 7004, 9001 to 9004	User

Program Example

The following program executes the positioning start of the positioning data number 1 when X100 turns ON.

1	· · · ×100 · · · · · · · · · · · · · · · · · ·	Positioning start pulse
2	Var_Flag_Inst MOVP I EN ENO Var_ControlData[2] S d	Sets start signal number 1
	EN ENO dVar_Flag_Mem	Turns positioning start instruction memory ON
3	Var_Flag_Mem ZP_PSTRT1 I EN I Un J Var_Result S S	Performs positioning start
	EN ENO d Var_Flag_Mem	Turns positioning start instruction memory OFF

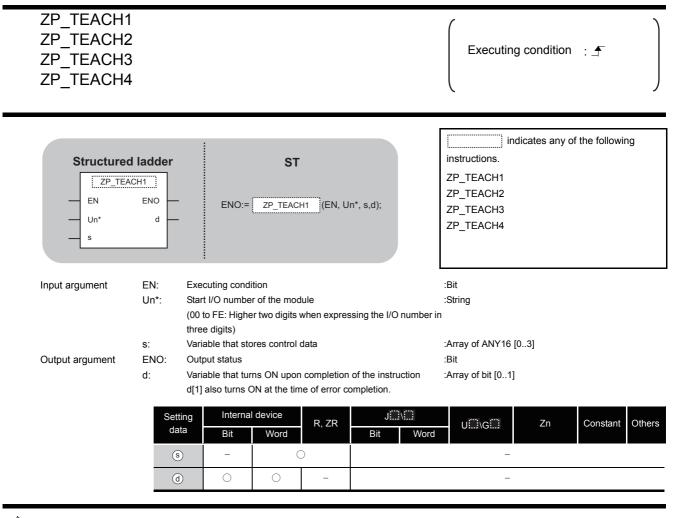
[Structured ladder]

[ST]

PLS(X100, Var_Flag_Inst); (* Positioning start pulse *) IF(Var_Flag_Inst=TRUE)THEN MOVP(TRUE, 1, Var_ControlData[2]);(* Sets start signal number 1 *) SET(TRUE, Var_Flag_Mem); (* Turns positioning start instruction memory ON *) END_IF; IF(Var_Flag_Mem=TRUE)THEN (* Positioning start instruction memory ON *) ZP_PSTRT1(TRUE, "00", Var_ControlData, Var_Result); (* Performs positioning start *) RST(TRUE, Var_Flag_Mem); (* Turns positioning start instruction memory OFF *) END_IF;

5.5.3 TEACH instruction

ZP_TEACH1



☆ Function

This instruction performs teaching for the specified axis. (Refer to the following)

- ZP_TEACH1: Axis 1
- ZP_TEACH2: Axis 2
- ZP_TEACH3: Axis 3
- ZP_TEACH4: Axis 4

ZP_TEACH1

Device	Item	Setting data	Setting range	Setting side ^{*1}
s [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	-	System
\$[2]	Teaching data selection	 Set the address (positioning address/circular address) to which the current feed value is written. 0: Write the current feed value to the positioning address 1: Write the current feed value to the circular address 	0,1	User
s [3]	Positioning data No.	Set the positioning data number for which teaching is performed.	1 to 600	User

Program Example

The following program performs teaching for the positioning data number 3 of the axis 1 when X39 turns ON.

[Structured ladder]

1	· · · ×39 · · · · · · · · · · · · · · · · · · ·	Teaching instruction pulse
2	Var_Flag_Inst X0C I I/I EN EN d Var_Flag_Mem	Turns teaching instruction memory ON
3	Var_Flag_Mem MOVP I EN EN ENO s d Var_ControlData[2]	Sets teaching data
		Sets positioning data number
	ZP_TEACH1 EN Un Var_ControlData s	Performs teaching
	Var_Result[0] Var_Result[1] RST I I I I I I I I I I I I I I I I I I I	Turns teaching instruction memory OFF

[ST]

PLS(X39, Var_Flag_Inst);

(* Teaching instruction pulse *)

IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN SET(TRUE, Var_Flag_Mem); (* Turns teaching instruction memory ON *) END_IF;

IF(Var_Flag_Mem=TRUE)THEN (* Teaching instruction memory ON *) MOVP(TRUE, H0, Var_ControlData[2]); (* Sets teaching data *) MOVP(TRUE, K3, Var_ControlData[3]); (* Sets positioning data number *)

ZP_TEACH1(TRUE, "00", Var_ControlData, Var_Result); (* Performs teaching *)

IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN RST(TRUE, Var_Flag_Mem); (* Turns teaching instruction memory OFF *) END_IF; END_IF;

5.5.4 PFWRT instruction

ZP_PFWRT

ZP_PFWRT					Executing condition :
Structure EN Un* s		ENO:= ZF	ST P_PFWRT (EN, U	n*, s,d);	ZP_PFWRT
Input argument	Un*: Sta (00 thr s: Va ENO: Ou d: Va	ee digits) riable that stores o tput status riable that turns O	digits when expres		:Bit :String in :Array of ANY16 [01] :Bit :Array of bit [01]
	Setting data © d	-	ice R, ZR	Jiii\iii Bit Word	UIII\GIII Zn Constant Others -

Grant Function

This instruction writes the QD75 parameters, positioning data, and block start data to the flash ROM.

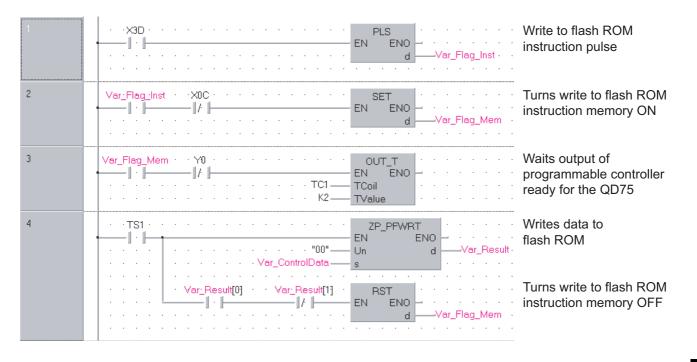
Control Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
s [0]	System area	_	_	-
ঙ[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	_	System

Program Example

The following program writes the parameters, positioning data, and block start data stored in buffer memory to the flash ROM when X3D turns ON.

[Structured ladder]



[ST]

PLS(X3D, Var_Flag_Inst); (* Write to flash ROM instruction pulse *) IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN

SET(TRUE, Var_Flag_Mem); (* Turns write to flash ROM instruction memory ON *) END_IF;

IF((Var_Flag_Mem=TRUE)&(Y0=FALSE))THEN OUT_T(TRUE, TC1, 2);

(* Waits output of programmable controller ready for the QD75 *)

END_IF;

IF(TS1=TRUE)THEN (* Write to flash ROM instruction memory ON *) ZP_PFWRT(TRUE, "00", Var_ControlData, Var_Result); (* Writes data to flash ROM *) IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN RST(TRUE, Var_Flag_Mem);

(* Turns write to flash ROM instruction memory OFF *)

END_IF; END_IF; ZP_PFWRT

5.5.5 PINIT instruction

Z_PINIT

Z_PINIT Executing condition : indicates the following instruction. Structured ladder Z_PINIT ST Z_PINIT ΕN ENO ENO:= Z_PINIT (EN, Un*, s,d); Un' d s :Bit Input argument EN: Executing condition :String Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..1] s: :Bit Output argument ENO: Output status :ANY16 Variable that turns ON upon completion of the instruction d: d[1] also turns ON at the time of error completion. :Array of bit [0..1] Internal device Setting J....\.... Others R, ZR Zn Constant U....\G.... data Bit Word Bit Word S _ \bigcirc \bigcirc

Function

This instruction initializes the QD75 setting data.

E Control Data

Device	Item	Setting data	Setting range	Setting side ^{*1}
⑤[0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	_	System

Program Example

[Structured ladder]

The following program initializes the parameters of buffer memory and those of flash ROM when X3C turns ON.

·X3C Parameter initialization PLS EN. ENO d i k instruction pulse -Var_Flag_Inst d 2 Var_Flag_Inst · · · XOC · · · · · · · · · Turns parameter SET -|| /- ||-EΝ ENO initialization instruction Var_Flag_Mem d memory ON 3 Var_Flag_Mem · · · Y0 · · · · · · · · · · OUT_T Waits output of EN · I · I· 11 ENO programmable controller · TC0 TCoil ready for the QD75 · К2 **TValue** 4 · · TSO · · · · · · · · · · · · · · · · · · **ZP_PINIT** Performs initialization ΕN ENO | • | of parameters -Var_Result Un d · · · · · · · Var_ControlData s Var_Result[0] · · · Var_Result[1] Turns parameter RST —|| · ||-—[]/ []-ΕN ENO initialization instruction Var_Flag_Mem d memory OFF

[ST]

PLS(X3C, Var_Flag_Inst); (* Parameter initialization instruction pulse *)

IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN SET(TRUE, Var_Flag_Mem);

(* Turns parameter initialization instruction memory ON *)

END_IF;

IF((Var_Flag_Mem=TRUE)&(Y0=FALSE))THEN OUT_T(TRUE, TC0, 2);

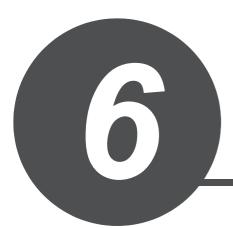
(* Waits output of programmable controller ready for the QD75 *)

END_IF;

END_IF;

Z_PINIT

MEMO



PID CONTROL INSTRUCTION

6.1	PID Control Instruction (Inexact Differential)	6-2
6.2	PID Control Instruction (Exact Differential)	6-16

1

6.1 PID Control Instruction (Inexact Differential)

6.1.1 PIDINIT instruction

S_PIDINIT

SP_PIDINIT		P: Executing condition :
Structured S.PID EN s		indicates any of the following instructions. S_PIDINIT SP_PIDINIT
Input argument Output argument	EN: Executing condition s: Start number of the device that stores PID of ENO: Execution result Internal device Setting data Internal device Bit Word S -	Bit ANY16 Bit UIII\GIII Zn Constant Others Bit Word -

Function

This instruction enables PID control by registering the PID control data for the number of loops to be used to the CPU module in batch.

(1) PID control data

			Setting range		Cotting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
Common sett	ng data (device: (s) +	0 to (s) +1)				
s) +0	Number of loops	Set the number of loops for PID operation.				
ঙি +1	Number of loops in one scan	Set the number of loops for PID operation in one scan if multiple loops have reached the sampling cycle time.	1 to 32		User	An error occurs and the PID operation for all loops is not performed.
Setting data for	or No. 1 loop (device:	s +2 to s +15)				
s) +2	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	
s) +3	Sampling cycle (TS)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	
s +4	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User	
(ھ) +5	Integral constant (TI)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	User	An error occurs and the PID operation for the corresponding loop is not
© +6	Derivative constant (Tɒ)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes a significant change in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	performed.
s +7	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User	

*1 : For the PID operational expressions to be set for Operational expression selection, refer to the MELSEC-Q/ L/QnA Programming Manual (PID Control Instructions). 6

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s +8	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the MVLL or MVHL is
s +9	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 less than -50, the value is clipped to -50. If the MVLL or MVHL is greater than 2050, the value is clipped to 2050.
s +10	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000.
(ھ) +11	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000.

	Data item	Description	Setting	range	Setting	Processing when the setting data are outside the setting range	
Device			With PID limits	Without PID limits	side		
s +12	(Fixed value)	-	0	0	User	-	
ঙ +13	Derivative gain (K⊳)	Set a duration (delay in action) for derivative action. As the setting value increases, the duration becomes smaller and action becomes closer to exact differential. Ideal value KD = 8.00	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
s +14	(Fixed value)	_	0	0	User	_	
<u>৩</u> +15	(Fixed value)	-	0	0	User	-	

Setting data for No. 2 loop (device: (s) +16 to (s) +29)

	Operational	
s +16	expression	
	selection	
0 + 17	Sampling cycle	
s +17	(TS)	
	Proportional	
s +18	constant	
	(KP)	
	Integral	
s +19	constant	
	(TI)	
	Derivative	
s +20	constant	
	(TD)	
Q 121	Filter coefficient	
<u></u> জ +21	(α)	The same as Catting data for No. 4 loop
(s) +22	MV lower limit	The same as Setting data for No. 1 loop
3 722	(MVLL)	
(s) +23	MV upper limit	
3 723	(MVHL)	
	MV change rate	
s +24	limit	
	(🛆 MVL)	
	PV change rate	
s +25	limit	
	($ riangle$ PVL)	
s +26	(Fixed value)	
0.107	Derivative gain	
s +27	(KD)	
s +28	(Fixed value)	
s +29	(Fixed value)	

			Setting	range	Oction	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
Setting data fo	or No. n loop					
	Operational					
s +(m+0)	expression					
	selection					
s +(m+1)	Sampling cycle					
(m+1)	(TS)					
	Proportional					
জ +(m+2)	constant					
	(KP)					
	Integral					
s +(m+3)	constant					
	(TI)					
	Derivative					
জ +(m+4)	constant					
	(TD)					
s +(m+5)	Filter coefficient					
(III+5)	(α)	The same as Setting data	for No. 1 loop			
s +(m+6)	MV lower limit	The same as Setting data				
(III+0)	(MVLL)					
	MV upper limit					
\$ +(m+7)	(MVHL)					
	MV change rate					
s +(m+8)	limit					
	(🛆 MVL)					
	PV change rate]				
s +(m+9)	limit					
	(🛆 PVL)					
s +(m+10)	(Fixed value)	1				
	Derivative gain	1				
s +(m+11)	(KD)					
s +(m+12)	(Fixed value)					
s +(m+13)	(Fixed value)					

m=(n-1)×14+2 n: number of loops

Precautions

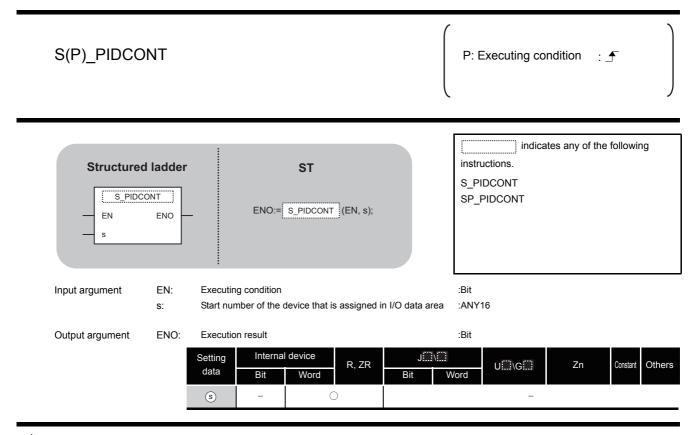
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, imes: Not applicable

6.1.2 PIDCONT instruction

S_PIDCONT



Grant Function

- (1) This instruction measures sampling cycle and performs PID operation at instruction execution.
- (2) This instruction performs PID operation based on the set value (SV) and process value (PV) in the I/O data area set to the device number specified by (s) or later, and stores the operation result to the automatic manipulated value (MV) area in the I/O data area.
- (3) PID operation is performed in response to the first execution of the PIDCONT instruction after the set sampling cycle time has elapsed.

(1) I/O data

	()						
Device	Data na	ime	Description	Setting With PID limits	Without PID limits	Setting side	Processing when the setting data are outside the setting range
s +0	Initial processing flag		Processing method at the start of PID operation	 PID operation for the number of loops to be used is batch-processed in one scan. PID operation for the number of loops to be used is processed in several scans. 		User	-
\$ +1 to \$ +9	(1	PID control reserved by	work area the system)	-	-	_	-
I/O data area f	or No. 1 loop (de	vice: (s) +10	to 💿 +27)				
s +10	Set value	SV	PID control target value	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If SV is less than 0, the value is clipped to 0. • If SV is greater than 2000, the value is clipped to 2000.
s +11	Process value	PV	 Feedback data from the control target to the A/D conversion module 	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If PV is less than -50, the value is clipped to -50. • If PV is greater than 2050, the value is clipped to 2050.
s +12	Automatic manipulated value	MV	 Manipulated value obtained by PID operation The value is output from the D/A conversion module to the control target. 	-50 to 2050	-32768 to 32767	System	-
ঙ +13	Process value after filtering	PVf	 Process value obtained by calculation using operational expression. *1 	-50 to 2050	-32768 to 32767	System	-
s +14	Manual manipulated value	MVman	Store the data output from the D/A conversion module in manual operation.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVMAN is less than -50, the value is clipped to -50. • If MVMAN is greater than 2050, the value is clipped to 2050.

*1 : For Process value after filtering (PVf), the value calculated based on the process value of input data are stored.

For the operational expression, refer to the MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

Device	Data name	e	Description	Setting With PID limits	g range Without PID limits	Setting side	Processing when the setting data are outside the setting range
ঙ) +15	automatic	MAN/ AUTO	 Select whether the output to the D/A conversion module is a manual manipulated value or an automatic manipulated value. In manual operation, the automatic manipulated value remains unchanged. 	value	tic manipulated	User	When other than 0 or 1 is selected, an error occurs and the operation for the corresponding loop is not performed.
s +16	Alarm A	ALARM	 Used to determine if the change rate of the MV (manipulated value) and the PV (process value) is within or outside the limit value range. Once set, the alarm data are maintained until the user resets it. When the MV variation is outside the limit range, bit 1 (b1) is set to '1'. When the PV variation is outside the limit range, bit 0 (b0) is set to '1'. 	is i 	FPV variation s outside the mit range, l' is set. f MV variation s outside the mit range, l' is set.	User System	-
(s) +17 to (s) +32	PID control work area (reserved by the system)			_	_	-	

I/O data area for No. 2 loop (device: (\hat{s}) +28 to (\hat{s}) +45)

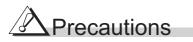
I/O data area to	or No. 2 loop (de	evice: (s) +	28 to (s) +45)				
s +33	Set value	SV					
s) +34	Process value	PV					
	Automatic						
s +35	manipulated	MV					
	value						
	Process						
s +36	value after	PVf	The same as I/O data area	for No. 1 loop			
	filtering						
	Manual						
s +37	manipulated	MVman					
	value						
	Manual/	MAN/					
s +38	automatic	AUTO					
	selection						
s +39	Alarm	ALARM					
s +40							
to			ol work area	_	-	_	
s +55	(re	eserved D	y the system)				

S_PIDCONT

6

				Setting	range	Setting	Processing when the
Device	Data r	name	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
I/O data area	or No. n loo	D				-	
s [0]	Set value	SV					
ঙ[1]	Process value	PV					
\$[2]	Automatic manipulated value	MV					
⑤[3]	Process value after filtering	PVf	The same as I/O data are	The same as I/O data area for No. 1 loop			
ঙ [4]	Manual manipulated value	MVman					
s [5]	Manual/ automatic selection	MAN/ AUTO					
⑤[6]	Alarm	ALARM					
© [7] to © [22]			trol work area by the system)	-	-	_	-

m=(n-1) \times 23+10 n: number of loops



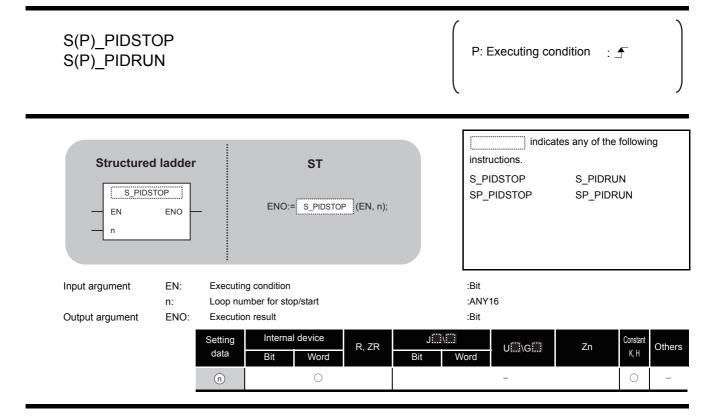
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.1.3 PIDSTOP instruction and PIDRUN instruction

S_PIDSTOP, S_PIDRUN



Function

- S(P)_PIDSTOP
 This instruction stops the PID operation for the loop number specified by 'n'.
- S(P)_PIDRUN This instruction starts the PID operation for the loop number specified by 'n'.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6

6.1.4 PIDPRMW instruction

S_PIDPRMW

S(P)_PIDPR	MW			P: Executing condition	: _
Structured EN s		ST ENO:= S_PIDPRMW (EN, n, s);		indicates any of instructions. S_PIDPRMW SP_PIDPRMW	the following
Input argument	EN: n: s:	Executing condition Loop number to be changed Start number of the device that stores PID contro changed	:	Bit ANY16 ANY16	
Output argument	ENO:	Execution result Internal device R, ZR 0n 0 (s) -	∷ J∭\∭ Bit Wor	Bit rd U:::\G::: Zn - -	Constant K, H O – – –

Grant Function

This instruction changes the operation parameter of the loop number specified by 'n' to the PID control data stored in the devices starting from the device number specified by \mathfrak{D} .

(1) PID control data

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s) +0	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	An error occurs and the PID operation for the corresponding loop is not
s +1	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	performed.

*1 : For the PID operational expressions set for Operational expression selection, refer to the MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	range	Cotting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range	
ঙ +2	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User		
s +3	Integral constant (TI)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	User		
ঙি +4	Derivative constant (T⊳)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
ড +5	Filter coefficient α	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User		
ঙ +6	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVLL or MVHL value is	
٤) +7	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 If MVLL or MVHL value is less than -50, the value is clipped to -50. If MVLL or MVHL value is greater than 2050, the value is clipped to 2050. 	

S_PIDPRMW

			Setting	range	Setting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
\$ +8	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000. 	
s +9	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the △ PVL value is less than 0, the value is clipped to 0. • If the △ PVL value is greater than 2000, the value is clipped to 2000.	
s +10	(Fixed value)	-	0	0	User	-	
ঙ +11	Derivative gain (K _D)	Set a duration (delay in action) for derivative action. As the setting value increases, the duration becomes smaller and action becomes closer to exact differential. Ideal value K _D = 8.00	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\cos)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
s +12	(Fixed value)	-	0	0	User	-	
s +13	(Fixed value)	_	0	0	User	-	

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2 PID Control Instruction (Exact Differential)

6.2.1 PIDINIT instruction

PIDINIT

PIDINIT(P)						F	P: Executing co	ondition	: 🛧	
Structure PiDir EN s		ENO:=	ST PIDINIT (EN, s);		PI	structions. IDINIT IDINITP	ates any of t	the followin	g
Input argument Output argument	s: Si ENO: E: Se d	xecuting condition art number of the d xecution result tting ata Bit s)	device	es PID co R, ZR	ntrol data J⊞\i Bit	:Bi	NY16 t	Zn	Constant	Others

This instruction enables PID control by registering the PID control data for the number of loops to be used to the CPU module in batch.

(1) PID control data

			Setting	range	0	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
Common setti	ng data (device: ⑤+	0 to (s) +1)				
s) +0	Number of loops	Set the number of loops for PID operation.	1 tc	32	User	
\$ +1	Number of loops in one scan	Set the number of loops for PID operation in one scan if multiple loops have reached the sampling cycle time.	1 tc	9 32	User	An error occurs and the PID operation for all loops is not performed.
Setting data for	or No. 1 loop (device:	s +2 to s +11)				
s) +2	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	
s +3	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	
s) +4	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User	
) +5	Integral constant (TI)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	User	An error occurs and the PID operation for the
© +6	Derivative constant (T⊳)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes a significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	corresponding loop is not performed.
s +7	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User	

*1 : For the PID operational expressions set for Operational expression selection, refer to the MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

6

NTROL JCTION

			Setting	g range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s +8	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVLL or MVHL value is
s +9	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 less than -50, the value is clipped to -50. If MVLL or MVHL value is greater than 2050, the value is clipped to 2050.
s +10	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000.
\$ +11	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the △ PVL value is less than 0, the value is clipped to 0. • If the △ PVL value is greater than 2000, the value is clipped to 2000.

Device	Data item	Description	Setting	range Without PID	Setting	Processing when the setting data are outside the		
Device	Data item	Description	With PID limits	limits	side	setting range		
Setting data fo	n br No. 2 loop (device:	() +12 to () +21)						
	Operational							
s +12	expression							
0.12	selection							
<u> </u>	Sampling cycle							
s +13	(TS)							
	Proportional							
ঙ +14	constant							
	(KP)	-						
	Integral							
s +15	constant (TI)							
	Derivative	-						
s +16	constant							
0 +10	(TD)	The same as Setting data fo	r No. 1 loop					
0	Filter coefficient	1						
s +17	(α)							
0 140	MV lower limit							
s +18	(MVLL)							
s +19	MV upper limit							
<u> </u>	(MVHL)							
	MV change rate							
s +20	limit							
	(<u>∧</u> MVL)	-						
	PV change rate limit							
s +21	(△ PVL)							
Setting data fo								
J J J J J J J J J J J J J J J J J J J	Operational	İ						
s +(m+0)	expression							
<u> </u>	selection							
s +(m+1)	Sampling cycle							
(III+1)	(TS)							
	Proportional							
S +(m+2)	constant (KP)							
	Integral							
(s) +(m+3)	constant							
(III-3)	(TI)							
	Derivative							
s +(m+4)	constant							
	(TD)	The same as Setting data fo	r No. 1 loop					
s +(m+5)	Filter coefficient							
(III+3)	(△)							
s +(m+6)	MV lower limit							
	(MVLL)	4						
s +(m+7)	MV upper limit							
/	(MVHL)	4						
	MV change rate limit							
\$ +(m+8)	(∧ MVL)							
	PV change rate	{						
(s) +(m+9)	limit							
0 .((<u>∧</u> PVL)							
		=(n-1)×10+2						

m=(n-1)×10+2 n: number of loops 6

NTROL JCTION

PID CON INSTRU

PIDINIT

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.2 PIDCONT instruction

PIDCONT

PIDCONT(P)	P: Executing condition :
Structure PIDC EN s		indicates any of the following instructions. PIDCONT PIDCONTP
Input argument	EN: Executing condition s: Start number of the device that is assigned	:Bit in I/O data area :ANY16
Output argument	Execution result Setting data Internal device Bit Word R, ZR ③ - 〇	:Bit JIII\III Bit Word UIII\GIII Zn Constant Others -

☆ Function

- (1) This instruction measures sampling cycle and performs PID operation at instruction execution.
- (2) This instruction performs PID operation based on the set value (SV) and process value (PV) in the I/O data area set to the device number specified by (s) or later, and stores the operation result to the automatic manipulated value (MV) area in the I/O data area.
- (3) PID operation is performed in response to the first execution of the PIDCONT instruction after the set sampling cycle time has elapsed.

(1) I/O data

			Setting	range	Setting	Processing when the
Device	Data name	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s +0	Initial processing flag	Processing method at the start of PID operation	 PID operation for the number of loops to be used is batch-processed in one scan. PID operation for the number of loops to be used is processed in several scans. 		User	_
(s) +1 to (s) +9		ol work area y the system)	_	_	-	-

I/O data area for No. 1 loop (device: (s) +10 to (s) +27)

I/O data area f	or No. 1 loop (de	vice: (s)+1	0 to (s) +27)				
s) +10	Set value	SV	PID control target value	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If SV is less than 0, the value is clipped to 0. • If SV is greater than 2000, the value is clipped to 2000.
ঙ) +11	Process value	PV	Feedback data from the control target to the A/D conversion module	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If PV is less than -50, the value is clipped to -50. • If PV is greater than 2050, the value is clipped to 2050.
ঙ +12	Automatic manipulated value	MV	 Manipulated value obtained by PID operation The value is output from the D/A conversion module to the control target. 	-50 to 2050	-32768 to 32767	System	-
s) +13	Process value after filtering	PVf	Process value obtained by calculation using operational expression. *1	-50 to 2050	-32768 to 32767	System	-

*1 : For process value after filtering (PVf), the value calculated based on the process value of input data are stored.

For the operational expression, refer to the MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

		Setting range		g range	Catting	Processing when the	
Device	Data na	ame	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
ঙ) +14	Manual manipulated value	MVman	 Store the data output from the D/A conversion module in manual operation. 	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVMAN is less than -50, the value is clipped to -50. • If MVMAN is greater than 2050, the value is clipped to 2050.
জ +15	Manual/ automatic selection	MAN/ AUTO	 Select whether the output to the D/A conversion module is a manual manipulated value or an automatic manipulated value. In manual operation, the automatic manipulated value remains unchanged. 	0: Automatic manipulated value 1: Manual manipulated value		User	When other than 0 or 1 is selected, an error occurs and the operation for the corresponding loop is not performed.
s +16	Alarm	ALARM	 Used to determine if the change rate of the MV (manipulated value) and the PV (process value) is within or outside the limit value range. Once set, the alarm data are maintained until the user resets it. When the MV variation is outside the limit range, bit 1 (b1) is set to '1'. When the PV variation is outside the limit range, bit 0 (b0) is set to '1'. 		If PV variation is outside the limit range, '1' is set. If MV variation is outside the limit range, '1' is set.	User System	_
s +17 to s +27	(rol work area by the system)		-	-	-

PIDCONT

				Sottin	g range		Droccesing when the	
Device	Data na	ame	Description	With PID limits	Without PID limits	Setting side	Processing when the setting data are outside the setting range	
I/O data area fo	or No. 2 loop (d	device: (s)	+28 to (s) +45)		-			
s +28	Set value	SV						
s +29	Process value	PV						
s +30	Automatic manipulated value	MV						
s) +31	Process value after filtering	PVf	The same as I/O data area for No. 1 loop					
s) +32	Manual manipulated value	MVman						
s +33	Manual/ automatic selection	MAN/ AUTO						
s +34	Alarm	ALARM						
s +35		PID cont	rol work area					
to	(by the system)		-	-	-	
s +45			• • •					
I/O data area fo	or No. n loop							
s [0]	Set value	SV						
ি [1]	Process value	PV						
s [2]	Automatic manipulate d value	MV						
s [3]	Process value after filtering	PVf	The same as I/O data area	for No. 1 loop				
s [4]	Manual manipulate d value	MVman						
ঙ [5]	Manual/ automatic selection	MAN/ AUTO						
⑤ [6]	Alarm	ALARM						
⑤ [7]								
to	(rol work area by the system)		-	-	-	
S[17]	(reserved by the system)							

 $m=(n-1) \times 18+10$ n: number of loops

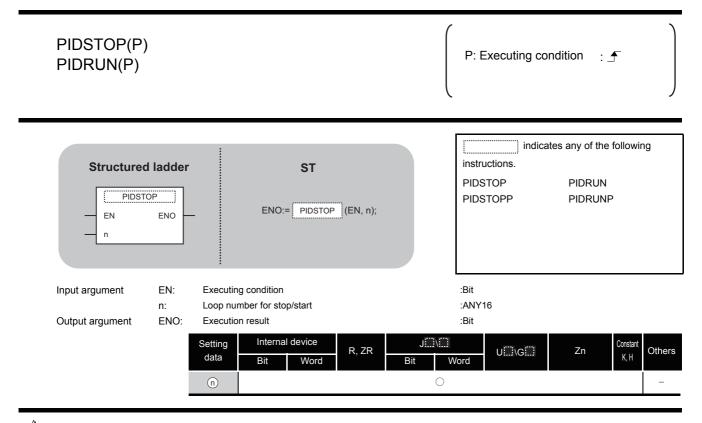
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.3 PIDSTOP instruction and PIDRUN instruction

PIDSTOP, PIDRUN



Grant Function

(1) PIDSTOP(P)

This instruction stops the PID operation for the loop number specified by 'n'.

(2) PIDRUN(P)

This instruction starts the PID operation for the loop number specified by 'n'.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.4 PIDPRMW instruction

PIDPRMW

PIDPRMW(F	?)				P: Executing cor	ndition : _		
Structured PIDPR EN n s		ENO:=	ST	s);	indicat instructions. PIDPRMW PIDPRMWP	es any of the	followin	g
Input argument Output argument	EN: n: s: ENO:	Executing condition Loop number to be Start number of the changed Execution result		control data to be	:Bit :ANY16 :ANY16 :Bit			
		Setting data Bit n O	Word R, ZR	JANA Bit V	/ord UINGII	Zn	Constant K, H -	Others _

Grant Function

This instruction changes the operation parameter of the loop number specified by 'n' to the PID control data stored in the devices starting from the device number specified by

(1) PID control data

				range	Setting	Processing when the	
Device	Data item Description With		With PID limits	Without PID limits	side	setting data are outside the setting range	
s +0	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	An error occurs and the PID operation for the corresponding loop is not	
s +1	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	performed.	

*1 : For the PID operational expressions set for Operational expression selection, refer to the MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	range	Setting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
ঙ +2	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User		
(ھ) +3	Integral constant (TI)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 T1 = Infinite (∞)	User		
ঙি +4	Derivative constant (Tɒ)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
s) +5	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User		
s +6	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is not performed after values are replaced as follows: • If MVLL or MVHL value is	
s) +7	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	 If MVLL or MVHL value is less than -50, the value is clipped to -50. If MVLL or MVHL value is greater than 2050, the value is clipped to 2050. 	

	Data item	Description	Setting range		Setting	Processing when the
Device			With PID limits	Without PID limits	side	setting data are outside the setting range
٤) +8	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: △ MVL value is less than 0, the value is clipped to 0. △ MVL value is greater than 2000, the value is clipped to 2000.
(3) +9	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU	0	0	
LCPU	0	0	

 \bigcirc : Applicable, \times : Not applicable

MEMO

SOCKET COMMUNICATION FUNCTION INSTRUCTION

7.1	SOCOPEN Instruction	2
7.2	SOCCLOSE Instruction	5
7.3	SOCRCV Instruction	8
7.4	SOCRCVS Instruction	1
7.5	SOCSND Instruction	3
7.6	SOCCINF Instruction	6
7.7	SOCCSET Instruction	9
7.8	SOCRMODE Instruction	2
7.9	SOCRDATA Instruction	4

1

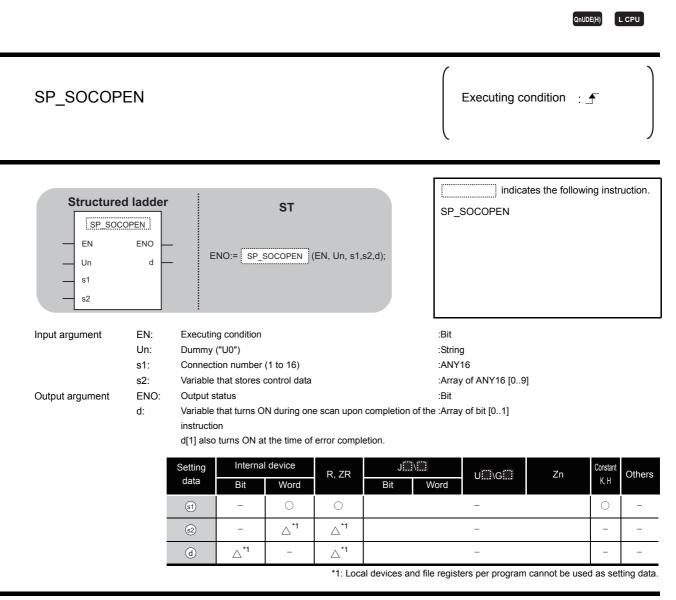
2 OVERVIEW

INSTRUCTION TABLES

3

7.1 SOCOPEN Instruction

SP_SOCOPEN



☆ Function

This instruction establishes a connection.

Device	Item	Setting data	Setting range	Setting side
€2 [0]	Execution type/ Completion type	Specify which to use the parameter values set by GX Works2 or the setting values of the following control data ((2) +2 to (2) +9) at open processing of a connection. 0000H: Uses the parameter set in [Open settings] of GX Works2. 8000H: Uses the settings of control data (2) +2 to (2) +9.	0000н, 8000н	User
፼[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
@[2]	Application setting area	 b15b14b13 to b10 b9 b8 b7 to b0 c)+2 3 0 21 0 c) Communication method (protocol) c): TCP/IP 1: UDP/IP 2) With/without procedure in socket communication function 1: Nonprocedural communication 3) Open system 00: Active open or UDP/IP 10: Unpassive open 11: Fullpassive open 	(See the left column.)	User
⊚[3]	Host station port No.	Specify the port number of the host station.	1н to 1387н, 1392н to FFFEн (400н or later is recommended)	User
@ [4] @ [5]	Destination IP address ^{*2}	Specify the IP address of the external device.	1н to FFFFFFFFн (FFFFFFFFн: broadcast)	User
⊚[6]	Destination port No. ^{*2}	Specify the port number of the external device.	401н to FFFFн (FFFFн: broadcast)	User
© [7] to © [9]	-	Unavailable	-	System

*1: "Destination IP address" and "Destination port No" are neglected at Unpassive open.

Precautions

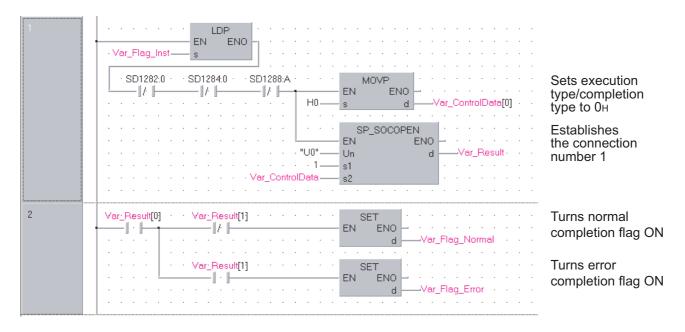
Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

/Program Example

The following program opens the connection 1.

(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder]



[ST]

```
IF((LDP(TRUE, Var_Flag_Inst))
&(SD1282.0=FALSE) &(SD1284.0=FALSE) &(SD1288.A=TRUE))THEN
    MOVP(TRUE, H0, Var_ControlData[0]);
                                  (* Sets execution type/completion type to 0H *)
    SP_SOCOPEN(TRUE, "U0", 1, Var_ControlData, Var_Result);
                                  (* Establishes the connection number 1 *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                              (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                              (* Normal completion *)
          SET(TRUE, Var_Flag_Normal);
                                              (* Turns normal completion flag ON *)
    ELSE
                                              (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                              (* Turns error completion flag ON *)
```

END_IF; END_IF;

7.2 SOCCLOSE Instruction

SP_SOCCLOSE

						QnUDE(H)	L CPU
SP_SOCCL	OSE				Executing of	condition : 🛧	
Structure SP SOC EN Un s1 s2		ENO:=	ST SOCCLOSE	(EN, Un, s1,s	SP_SOCCLOSE	ates the following ins	struction.
Input argument Output argument	Un: s1: s2: ENO: d:	Executing condition Dummy ("U0") Connection number Variable that stores Output status Variable that turns (instruction d[1] also turns ON a	r (1 to 16) control data DN during on	e scan upon	:Bit :String :ANY16 :Array of ANY16 [0 :Bit ompletion of the :Array of bit [01] on.	1]	
		International International data Bit ©1 - ©2 - ⊙3 -	Al device Word C A ^{*1} -	R, ZR ○ △*1 △*1	J\ Bit Word - - - -	Zn Consta K, H	nt Others
	_				devices and file registers per prograr	n cannot be used as s	etting data

Grant Function

This instruction shuts off a specified connection.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
፼[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program shuts off the connection 1 when the disconnect request flag turns ON or the external device closes the connection 1.

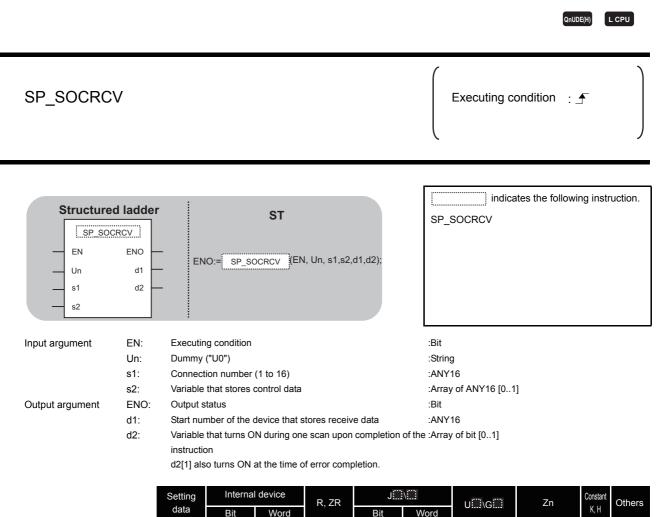
1	LDF SD1282.0 SD1282.0 Turns flag ON when open completion signal turns OFF	
2	····································	Shuts off the connection number 1
	···Var_Flag ···· SET ···· ···· EN ···· d	Turns execution flag ON
3	Var_Result[0] Var_Result[1] SET I I I I Var_Result[0] I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	Turns normal completion flag ON
	· · · · · · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns error completion flag ON
	EN ENO dVar_Flag_Exe	Turns execution flag OFF

[Structured ladder]

[ST] IF(LDF(TRUE, SD1282.0))THEN PLS(TRUE, Var_Flag); END_IF;	(* When open completion signal turns OFF *) (* Turns flag ON *)
IF((LDP(TRUE, Var_Flag_Inst)) &(S OR((Var_Flag=TRUE)&(Var_Flag_ SP_SOCCLOSE(TRUE, "U0", SET(TRUE, Var_Flag_Exe); END_IF;	Exe=FALSE)))THEN 1, Var_ControlData, Var_Result); (* Shuts off the connection number 1 *)
ELSE	<pre>(* Execution finished *) (* Normal completion *) ormal); (* Turns normal completion flag ON *)</pre>

7.3 SOCRCV Instruction

SP_SOCRCV



Setting	Interna	l device	R, ZR	J	J		Zn	Constant	Others
data	Bit	Word	,	Bit	Word	0:		K, H	Canoro
(s1)	-	0	0			-		0	-
s2	-	^*1	^*1			_		-	-
dl	-	*1	*1			_		-	-
d2	^*1	-	^*1			-		-	-

*1: Local devices and file registers per program cannot be used as setting data.

C Function

This instruction reads receive data of a specified connection from the socket communication receive data area at the end process performed after the instruction execution.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	_	-	-
		The instruction completion status is stored.		
s2[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Receive Data

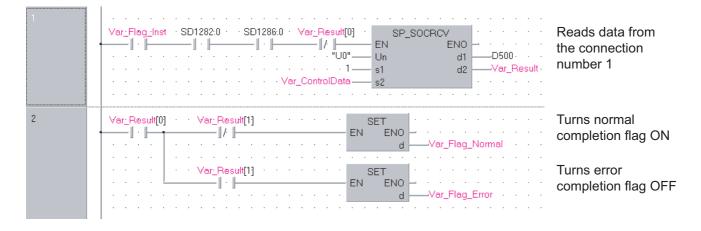
Device	Item	Setting data	Setting range	Setting side
		Data length of the data read from the socket communication receive		
d1 [0] +1	Receive data length	data area is stored.	0 to 2046	System
		(number of bytes)		
d1 [0] +1		Data read from the evolution municipation receive data area are stand		
to	Receive data	Data read from the socket communication receive data area are stored in ascending address order.	-	System
d1 [0] +n				

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads data received from the external device.

[Structured ladder]



[ST]

IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE) &(SD1286.0=TRUE) &(Var_Result[0]=FALSE))THEN SP_SOCRCV (TRUE, "U0", 1, Var_ControlData, D500, Var_Result); (* Reads data from the connection number 1 *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(TRUE, Var_Flag_Normal); ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END_IF;

END_IF;

7.4 SOCRCVS Instruction

S_SOCRCVS

		QnUDE(H) L CPU
S_SOCRCV	S	Executing condition :
Structure S.SOCI EN Un s		s, d);
Input argument Output argument	EN: Executing condition Un: Dummy ("U0") s: Connection number (1 to 16) ENO: Output status d: Start number of the device that stores red	:Bit :String :ANY16 :Bit :eive data :ANY16
	Setting data Internal device R, ZF Bit Word O	JIIIIII UIIII/GIII Zn Constant K, H Others
	•• •• ••	

• This instruction reads receive data of a specified connection from the socket communication receive data area.

Control Data

Device	Item	Setting data	Setting range	Setting side
@[0]	Receive data length	Data length of the data read from the socket communication receive data area is stored. (number of bytes)	0 to 2046	System
④[1]to④[n]	Receive data	Data read from the socket communication receive data area are stored in ascending address order.	_	System

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads data received from the external device.

[Structured ladder]

1		
<u></u>	-1	

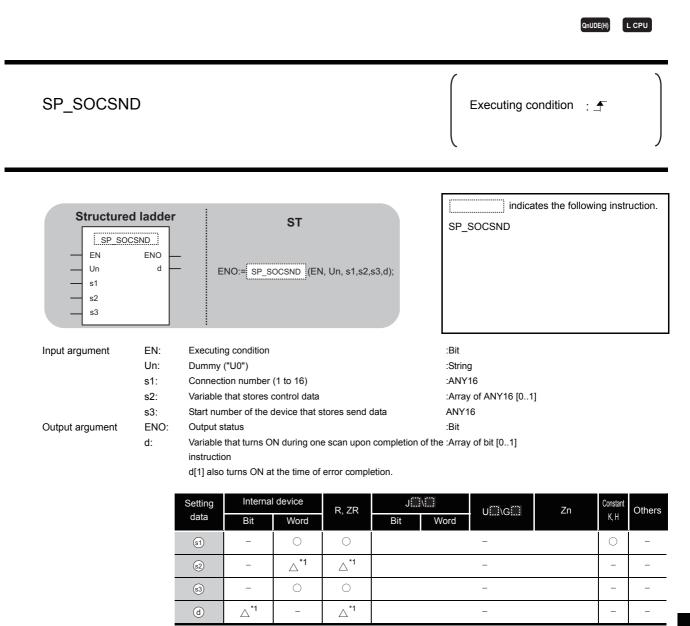
[ST]

IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE) &(SD1286.0=TRUE))THEN S_SOCRCVS(TRUE, "U0", 1, D5000); (* Reads data from the connection number 1 *)

END_IF;

7.5 SOCSND Instruction

SP_SOCSND



*1: Local devices and file registers per program cannot be used as setting data.

Grantion

• This instruction sends data to the external device of a specified connection.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
		The instruction completion status is stored.		
<u>s</u> 2[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

E Send Data

Device	Item	Setting data	Setting range	Setting side
s3 [0]	Send data length	Specify the data length of the send data. (number of bytes)	1 to 2046	User
s3 [1] to	Send data	Specify the send data.	_	User
s3 [n]				

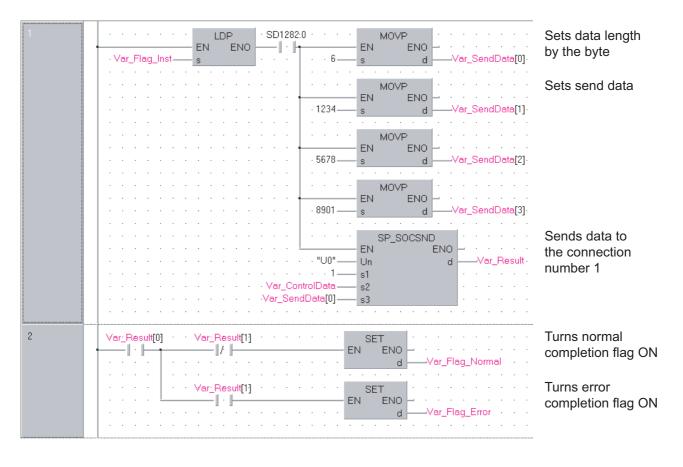
Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program sends data (1234, 5678, and 8901) to the external device using the socket communication function.

[Structured ladder]



[ST]

IF((LDP(TRUE, Var Flag Inst)) &(SD1282.0=TRUE))THEN MOVP(TRUE, 6, Var_SendData[0]); (* Sets data length by the byte *) MOVP(TRUE, 1234, Var_SendData[1]); (* Sets send data *) MOVP(TRUE, 5678, Var_SendData[2]); MOVP(TRUE, 8901, Var_SendData[3]); SP SOCSND(TRUE, "U0", 1, Var ControlData, Var SendData[0], Var Result); (* Sends data to the connection number 1 *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *)

SET(TRUE, Var_Flag_Error);

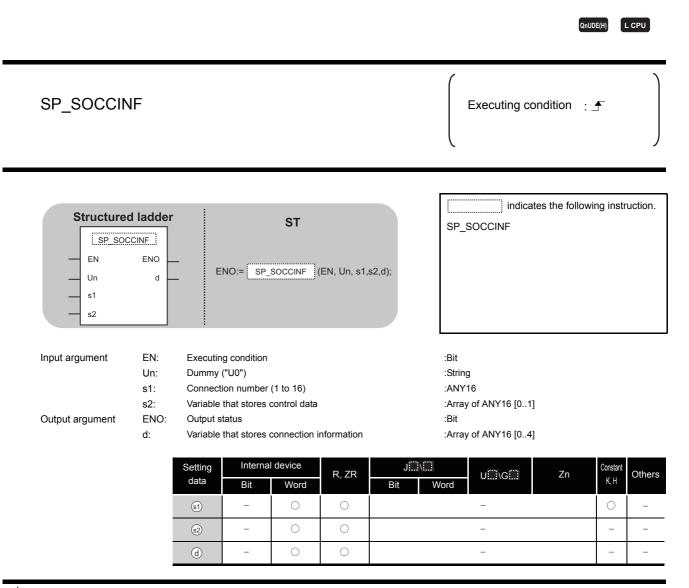
END_IF;

END_IF;

(* Turns error completion flag OFF *)

7.6 SOCCINF Instruction

SP_SOCCINF



Grant Function

• This instruction reads connection information of a specified connection.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
@[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

Connection information

Device	Item	Setting data	Setting range	Setting side
@ [0] @ [1]	Destination IP address	The IP address of the external device is stored.	1н to FFFFFFFн 0н : No destination (FFFFFFFFн: broadcast)	System
d [2]	Destination port No.	The port number of the external device is stored.	1н to FFFFн (FFFFн: broadcast)	System
@[3]	Host station port No.	The port number of the host station is stored.	1н to 1387н, 1392н to FFFEн	System
@[4]	Application setting area	(a) +4 (3) (2) (1) (2) (1) (2) (1) (2) (2) (1) (2) (2) (1) (2) (2) (1) (2) (2) (1) (2) (2) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	(See the left column.)	System



Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads connection information of the connection number 1.

[Structured ladder]

1		
	Var_Flag_Inst the second secon	Reads data from
	EN ENO - · · · ·	the connection
	d —	ection number 1
	••••••••••••••••••••••••••••••••••••••	
	Sector Sector Sector Star_ControlData — s2	



IF(Var_Flag_Inst=TRUE)THEN SP_SOCCINF(TRUE, "U0", 1, Var_ControlData, Var_Connection);

(* Reads data from the connection number 1 *)

END_IF;

7.7 SOCCSET Instruction

SP_SOCCSET

					QnUDE(H)
SP_SOCCS	ET				Executing condition :
Structure SP SOC EN Un s1 s2		ENO:= SP_SC	ST ICCSET (EN, U	n, s1, s2);	SP_SOCCSET
Input argument Output argument	EN: Un: s1: s2: ENO:	Executing condition Dummy ("U0") Connection number (1 Variable that stores cor Output status			:Bit :String :ANY16 :Array of ANY16 [04] :Bit
		Setting data Bit s1 -	Word R, T	ZRBit	Word UIII\GIII Zn Constant K, H - O

☆ Function

 This instruction changes the IP address and port number of the external device of a specified connection.

(Available only with a UDP/IP connection)

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
s2 [1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
@[2] @[3]	Destination IP address	Specify the IP address of the external device.	1н to FFFFFFFH 0н : No destination (FFFFFFFFH: broadcast)	User
፼[4]	Destination port No.	Specify the port number of the external device.	1н to FFFFн (FFFFн: broadcast)	User

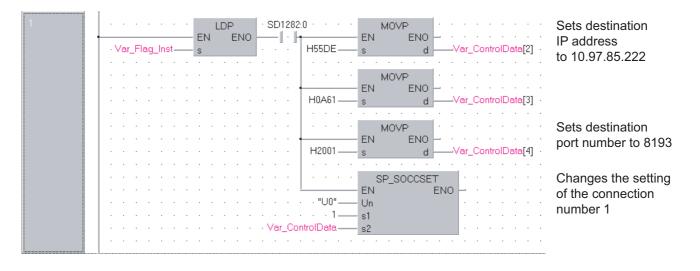
Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program changes the destination (destination IP address and port number) of the connection number 1 which is being open.

[Structured ladder]



[ST]

IF((LDP(TRUE, Var_Flag_Inst)) &(SD1282.0=FALSE) THEN MOVP(TRUE, H55DE, Var_ControlData[2]);

(* Sets destination IP address to 10.97.85.222 *)

MOVP(TRUE, H0A61, Var_ControlData[3]);

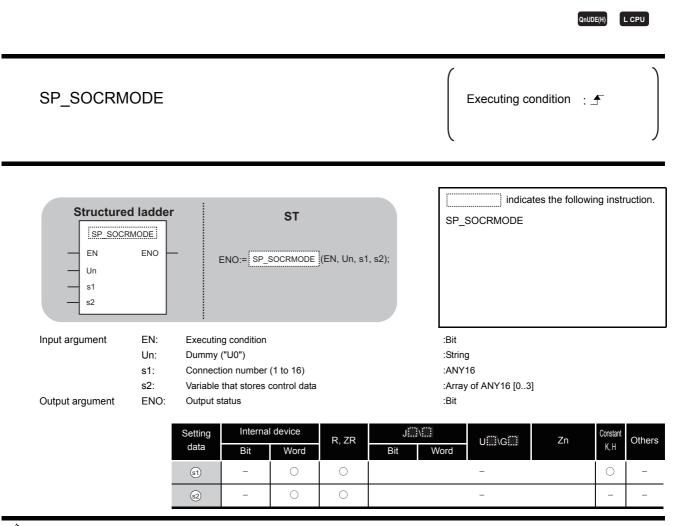
MOVP(TRUE, H2001, Var_ControlData[4]); (* Sets destination port number to 8193 *) SP_SOCCSET(TRUE, "U0", 1, Var_ControlData);

(* Changes the setting of the connection number 1 *)

END_IF;

7.8 SOCRMODE Instruction

SP_SOCRMODE



Grant Function

• This instruction changes the TCP receive mode (unavailable for a UDP connection) and receive data size.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
⊚[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
€2 [2]	TCP Receive Mode ^{*1}	Specify the TCP receive mode. 0 : TCP normal receive mode 1 : TCP fixed length receive mode	1, 0	User
€2[3]	Receive Data Size	Specify the receive data size of the socket communication. (number of bytes)	1 to 2046	User

*1: Unavailable for a connection.

Precautions

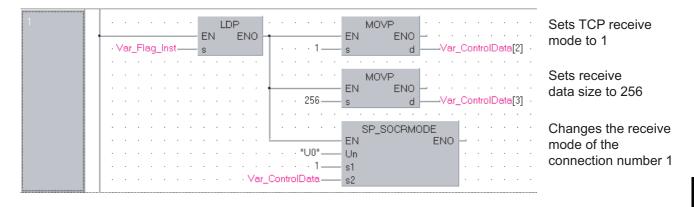
Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program changes the receive mode of the connection number1 to TCP fixed length receive mode and changes its receive data length to 256 bytes.

After instruction execution, the connection number 1 turns the receive status signal ON when the length of receive data reaches 256 bytes.

[Structured ladder]



SOCKET COMMUNICATION FUNCTION INSTRUCTION

7.9 SOCRDATA Instruction

S_SOCRDATA



S(P)_SOCR	DATA						P:E:	xecuting	condition	: 🗲	
	OCRDATA	,	ENO:=	S_SOCRD/	ST	, s1, s2, n, d);	S_SOCRI SP_SOCI	DATA	es the follo	wing instru	uctions.
Input argument	EN:		g condition				:Bit				
	Un: s1:	Dummy ("U0") on number	(1 to 16)			:String :ANY16				
	s1:			control data				NY16 [01]			
	n:			a (1 to 1024			ANY16				
Output argument	ENO:	Output st	atus				:Bit				
	d:	Variable 1	that stores	read data			ANY16				
		Setting data		l device	R, ZR	J\	U	\G	Zn	Constant	Others
			Bit	Word		Bit V	Vord			0	
	-	s1		-	0		_				_
	-	62	_	0	0		-			-	-
		n	-	0	0		-			0	-
		d	-	0	0		-			-	-

Grant Function

• This instruction reads data for the specified number of words from the socket communication receive data area of a specified connection, and stores it.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
@[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads the receive data length of the connection number 1.

[Structured ladder]

1	
	LDP SD1282:0 SD1286:0 SP_SOCRDATA Reads receive data
	EN EN EN EN EN EN EN Index Index <th< td=""></th<>
	s s s s s s connection number 1
	se se se se se se se se se se se se se s
	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·
<u> </u>	

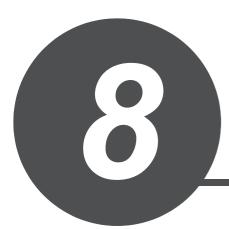
[ST]

IF((LDP(TRUE, Var_Flag_Inst)) &(SD1282.0=TRUE) &(SD1286.0=TRUE))THEN SP_SOCRDATA(TRUE, "U0", 1, Var_ControlData, 1, D4000);

(* Reads receive data length of connection number 1 *)

END_IF;

MEMO



BUILT-IN I/O FUNCTION INSTRUCTION

8.1	Positioning Function Dedicated Instruction	. 8-2
8.2	Counter Function Dedicated Instruction	8-18

8

8.1 Positioning Function Dedicated Instruction

8.1.1 IPPSTRT instruction

IPPSTRT1, IPPSTRT2

IPPSTRT1(F IPPSTRT2(F			P: Executing condition :
Structure PPPS EN n		ST ENO:= IPPSTRT (EN, n);	indicates any of the following instructions. IPPSTRT1 IPPSTRT1P IPPSTRT2 IPPSTRT2P
Input argument	EN: n:	Executing condition Positioning data number	:Bit :ANY16
Output argument		Execution result Internal device R, ZR data Bit Word n - O	:Bit J\ It Word U\G Zn Constant 0 - ○

Grant Function

This instruction specifies a data number to be executed for 'n' from the positioning data No. 1 to No. 10 which are previously set in GX Works2, and starts the specified axis (refer to the following).

- IPPSTRT1(P): Axis 1
- IPPSTRT2(P): Axis 2

Program Example

The following program starts the "Positioning Data" No. 1 of the Axis 1 when M0 turns ON.

[Structured ladder]



[ST] IPPSTRT1(M0, 1);

IPDSTRT1, IPDSTRT2

BUILT-IN I/O FUNCTION NSTRUCTION

PDSTRT1, PDSTRT2

IPDSTRT1(P) P: Executing condition : IPDSTRT2(P) indicates any of the following instructions. ST **Structured ladder** IPDSTRT1 IPDSTRT1 IPDSTRT1P ENO:= IPDSTRT1 (EN, s); IPDSTRT2 ΕN ENO IPDSTRT2P s :Bit Input argument EN: Executing condition Start number of the device in which the control data are stored: Array of ANY16 [0..7] s: Output argument ENO: Execution result :Bit Internal device Setting J....\.... R, ZR Zn Constant Others U....\G.... data Bit Word Bit Word S

Function

Disregarding "Positioning Data" No. 1 to No. 10 which are previously set in GX Works2, this instruction starts the positioning of the specified axis (refer to the following) using the data stored in the devices starting from \odot .

• IPDSTRT1(P): Axis 1

8.1.2 IPDSTRT instruction

• IPDSTRT2(P): Axis 2

Device	Item	Setting data	Setting range	Setting side
s [0]	Control system	 Positioning control (ABS) Positioning control (INC) Speed/position switching control (forward RUN) Speed/position switching control (reverse RUN) Current value change Speed control (forward RUN) Speed control (reverse RUN) 	1 to 7	
s [1]	Acceleration/deceleration time	-	0 to 32767 (ms)	User
s [2]	Deceleration stop time		0 to 32767 (ms)	
ঙ [3]	Dwell time	-	0 to 65535 (ms) ^{*1}	
ঙ [4]	Command speed	_	0 to 200000	
ঙ [5]		_	(pulse/s) ^{*2}	
ঙ [6]	Positioning address/movement amount	_	-2147483648 to	
s [7]			2147483647	

*1: Enter the setting value to the program as described below. 1 to 32767: Enter in decimal

32768 to 65535: Enter after converting it to hexadecimal

*2: The restricted speed value may be applied when the set value of the command speed is not within 0 to 200000.



The following program sets the following positioning data and starts the axis 1 when M0 turns ON.

Device	Item	Setting data				
D0	Control system	Positioning control (ABS)				
D1	Acceleration/deceleration time	1000 (ms)				
D2	Deceleration stop time	1000 (ms)				
D3	Dwell time	0 (ms)				
D4, D5	Command speed	20000 (pulse/s)				
D6, D7	Positioning address/movement amount	100000 (pulse/s)				

[Structured ladder]

1	.																		
		· M0													MO\	/		• •	
•		-1.	F					-						ΕN		ENO		· .	
	· ·	• •	• •	·	•	·	•	·	·	·	•	- 1 -		S		d		-D0	
	·	• •		·				·		1	•		•				Ľ.	• •	
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											-10	00-		S		d		-D1	
								.											
								.							MO\	/			
	·	· ·	• •			÷		-						ΕN		ENO	ŀ.	• •	
	·	• •	• •	·	·	·	·	·	·	·	·10	00-		s		d		-D2	
	·	• •	• •	·	•	·	•	·	·	·	·	• •	•			• •	÷.	• •	
	· ·	• •		•		1		·	1	1	•		•	EN	MO/	/ ENO	11	• •	
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								.											
	.							.							DMO	V	1.		
								-						ΕN		ENO	Ŀ.		
	·	· ·	• •			÷		·	·	÷	200	00-		s		d	H	-D4	
	·	• •	• •	•		·	•	·	•	·	•		•				÷.	• •	
	· ·	• •	•	·			•	·	•		·	• •	•	ENI	DMO	Y.	11	• •	
				÷		÷				. 1	000	00		EN s		ENO d	Γ.	-D6	
				÷	÷	÷			÷	. 1				5				-00	
	.							.							PDS:	TRT1	P		
	.													EN			EN	b –	
	.	· ·									· [D0-		s				•	
	·	· ·	• •	·	·	·	·	• •	·	·	·	• •	·	• •	• •	• •		• •	
11	1																		

[ST]

MOV(M0, 1, D0); MOV(M0, 1000, D1); MOV(M0, 1000, D2); MOV(M0, 0, D3); DMOV(M0, 20000, D4); DMOV(M0, 100000, D6); IPDSTRT1P(M0, D0);

> 8.1 Positioning Function Dedicated Instruction 8.1.2 IPDSTRT instruction

8.1.3 IPSIMUL instruction

IPSIMUL

L CPU

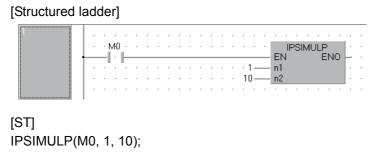
IPSIMUL(P)					P: Executing c	condition : 于	
Structure EN n1 n2			ST	, n2);	instructions. IPSIMUL IPSIMULP	cates any of the following	1
Input argument	EN: n1: n2:	Executing condition Axis 1 positioning d Axis 2 positioning d	ata number		:Bit :ANY16 :ANY16		
Output argument	ENO:	Execution result Setting data fin fin fin fin fin fin fin fin fin fin	device R, ZR	JENE Bit W	:Bit ord -	Zn Constant	Others - -

Grant Function

This instruction simultaneously starts the positioning of the axis 1 positioning data number specified by n1 and the axis 2 positioning data number specified by n2.

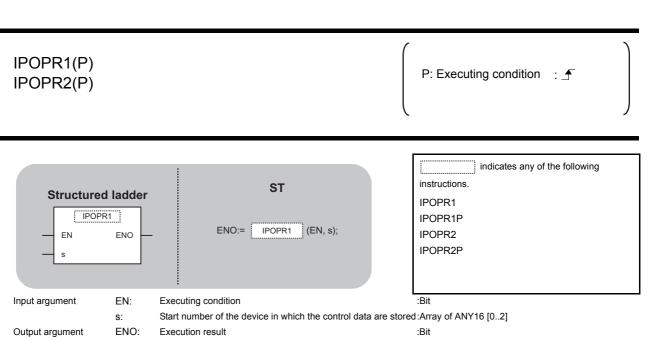
Program Example

The following program simultaneously starts the axis 1 positioning data No. 1 and the axis 2 positioning data No. 10 when M0 turns ON.



L CPU

8.1.4 IPOPR instruction



ENO: Execution result

Setting	Internal	device	R, ZR	J∭∖∭ Bit Word		JIII\III		JIII\III		U\G	Zn	Constant	Others
data	Bit	Word	, <u>_</u>			0		oonotant	011010				
\$	-	C)			-							
· · · · ·													

Grant Function

This instruction starts the OPR of which type is specified by (s) on the specified axis (refer to the following).

- · IPOPR1(P): Axis 1
- · IPOPR2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
(0] آھ	OPR type	1: Machine OPR 2: Fast OPR (OP address) 3: Fast OPR (standby address)	1 to 3	
s [1]			-2147483648 to	
© [2]	Standby address (Set only when Fast OPR (standby address (3)) is set for the OPR type)	-	2147483647 (Ignored when other than standby address	User
			(3))	

IPOPR1, IPOPR2

8

Program Example

The following program starts the machine OPR of the axis 1 when M0 turns ON.

Device	Item	Setting data		
D0	OPR type	Machine OPR		
D1, D2	Standby address	0 (Ignored)		

[Structured ladder]

1														
	•	MO	L				•		•			• •		
												· 1–		
	· · ·	• •		• •	•	·		·		·		· ·		
								I				• •		DIVIOV
	· ·	• •		• •	•	•		-		_	_		_	
	· ·	• •	·	• •		·	•	·		·	÷	· 0 –		s d D1 ·
	· · ·			• •	·	•		·		•		· ·		
		• •		• •	·			·		·		• •	÷	IPOPR1P
	· ·	• •		• •	•	·		<u> </u>						EN ENO
		• •		• •	·						·	D0-	_	s
	· ·	• •	•	• •	•	·	•	• •	•	·	·	• •	·	

[ST] MOV(M0, 1, D0); DMOV(M0, 0, D1); IPOPR1P(M0, D0);

IPJOG1, IPJOG2

L CPU

8.1.5 IPJOG instruction

ULT-IN I/O FUNCTION

IPJOG1 IPJOG2

Structure EN s1 s2		r 	ENO:=	ST IPJOG1	(EN, s1, s	2);	ins IP.	indic tructions. JOG1 JOG2	cates any c	of the following	1
Input argument	EN:		ng conditio				:Bit				
	s1: s2:	Directio 0: Forw			OG operation		e stored Arr	ay of ANY16 [0.	.3]		
Output argument	ENO:	Executi	on result				:Bit				
		Setting	Interna	l device	R, ZR	J	1	U\G	Zn	Constant	Oth
		data	Bit	Word	Π, ΖΙΥ	Bit	Word	0::\G::		Constant	Gui
		<u>s1</u>	-	(\supset			-			
		(s2)	0	_	0			_			

Grant Function

This instruction starts the JOG operation of the specified axis (refer to the following).

- IPJOG1: Axis 1
- IPJOG2: Axis 2

The JOG operation is executed in the direction specified by 0, using the JOG speed, JOG acceleration/deceleration time stored in the devices starting from 0.

Device	Item	Setting data	Setting range	Setting side
s1 [0]	JOG speed		0 to 200000	
s1 [1]			(pulse/s) ^{*1}	User
s1 [2]	JOG acceleration time	-	0 to 32767 (ms)	0361
s1 [3]	JOG deceleration time	-	0 10 02707 (115)	

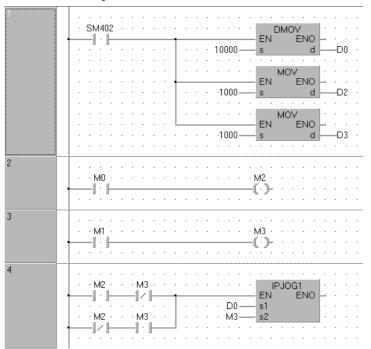
*1: The restricted speed value may be applied when the set value of the JOG speed is not within 0 to 200000.

Program Example

The following program starts the forward JOG operation when M0 turns ON, and starts the reverse JOG operation when M1 turns ON.

Device	Item	Setting data
D0, D1	JOG speed	10000
D2	JOG acceleration time	1000
D3	JOG deceleration time	1000

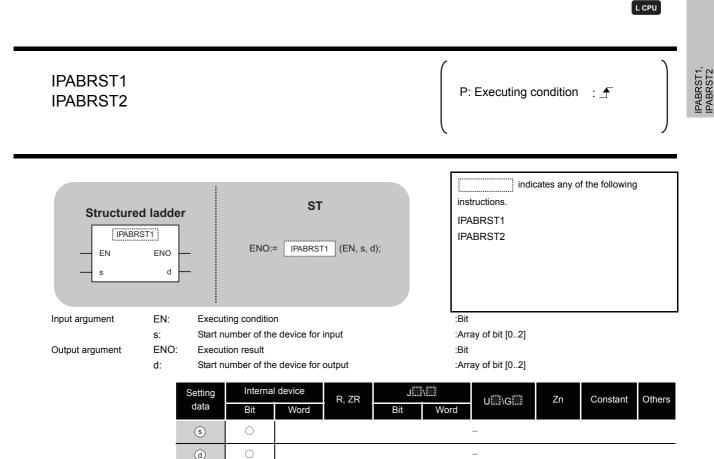
[Structured ladder]



[ST] DMOV(SM402, 10000, D0); MOV(SM402, 1000, D2); MOV(SM402, 1000, D3); OUT(M0, M2); OUT(M1, M3); IPJOG1(M2 AND NOT M3 OR NOT M2 AND M3, D0, M3);

IPABRST1, IPABRST2

8.1.6 IPABRST instruction



Granitical Function

This instruction executes the absolute position restoration of the specified axis (refer to the following) by communicating with the servo amplifier using the input device specified by (s) and output device specified by (d).

- IPABRST1: Axis 1
- IPABRST2: Axis 2

Control Data

(1) Signals imported from servo amplifier

Device	Item	Setting data	Setting range	Setting side
s [0]		ABS send data bit0		
s [1]	Signals imported from servo amplifier	ABS send data bit1	0, 1	User
s [2]		ABS send data ready		

(2) Signals exported to servo amplifier

Device	Item	Setting data	Setting range	Setting side
(0] (b)		Servo ON		
d [1]	Signals exported to servo amplifier	ABS transfer mode	-	System
d [2]		ABS request flag		

Program Example

This instruction executes the absolute position restoration of the axis 1 when M0 turns ON.

- X20 to X22: Signals imported from the servo amplifier
- Y30 to Y32: Signals exported to the servo amplifier

[Structured ladder]

1			
	• • M0 • • • • •		
		· · · · · · × ×20	E., E.,O
			· · · · · · · · · · · · · · · ·

[ST] IPABRST1(M0, X20, Y30);

8.1.7 IPSTOP instruction

IPSTOP1, IPSTOP2

IPSTOP1, IPSTOP2

L CPU

IPSTOP1 IPSTOP2

Structured ladder	ST	instructions. IPSTOP1	tes any of the following
EN ENO	ENO:= IPSTOP (EN);	IPSTOP2	
	ecuting condition ecution result	:Bit :Bit	
Settin data		JENCE UED/GEO Bit Word	Zn Constant Others

☆ Function

This instruction stops the positioning of the specified axis (refer to the following).

- IPSTOP1: Axis 1
- IPSTOP2: Axis 2

Program Example

The following program stops the axis 1 when M0 turns ON.

[Structured ladder]

.																								
·	•	M	10	•	•	•	•	•	•	•	•	•	•	•	•	F١	IPS J	SΤι	0P	1 M	•	÷	:	
																	4	•	•					



8.1.8 IPSPCHG instruction

IPSPCHG1, IPSPCHG2

L CPU

IPSPCHG1(IPSPCHG2(P: Executing condition :
	ed ladder ST CHGT ENO ENO:= IPSPCHG1 (EN, s);	indicates any of the following instructions. IPSPCHG1 IPSPCHG1P IPSPCHG2 IPSPCHG2P
Input argument	EN: Executing condition s: Start number of the device in which the control data a	
Output argument	Setting data Internal device R, ZR J: Solution Bit Word Bit	Bit

Grant Function

This instruction changes the speed of the specified axis (refer to the following) using the acceleration/deceleration time at speed change, deceleration stop time at speed change, and new speed value stored in the devices starting from (s).

- IPSPCHG1(P): Axis 1
- IPSPCHG2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
(0) (0)	Acceleration/deceleration time at speed	_		
s [0]	change		0 to 32767 (ms)	
s [1]	Deceleration stop time at speed change	-		User
ঙ [2]	New speed value	_	0 to 200000	
ঙ [3]			(pulse/s) ^{*1}	

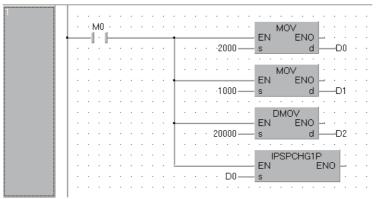
*1: The restricted speed value may be applied when the set value of the new speed is not within 0 to 200000.

Program Example

The following program changes the speed of the axis 1 when M0 turns ON.

Device	Item	Setting data
D0	Acceleration/deceleration time at speed change	2000 (ms)
D1	Deceleration stop time at speed change	1000 (ms)
D2, D3	New speed value	200000 (pulse/s)

[Structured ladder]



[ST] MOV(M0, 2000, D0); MOV(M0, 1000, D1); DMOV(M0, 20000, D2); IPSPCHG1P(M0, D0);

8.1.9 IPTPCHG instruction

IPTPCHG1, IPTPCHG2

L CPU

IPTPCHG1(F IPTPCHG2(F					(P:	Executing c	condition	: 🛧	
Structured IPTPCI EN s		ENO:= [ST);	IPT IPT IPT	indic structions. PCHG1 PCHG1P PCHG2 PCHG2P	cates any o	f the following]
Input argument Output argument	s: Tar dev ENO: Exe Setting		trol data are stored	J∭\	:Bit	Y32 ∪⊡\G∷	Zn	Constant	Othe
	data s	Bit W	/ord	Bit	Word			0	_

Grant Function

This instruction changes the position of the specified axis (refer to the following) to the new target position specified by \odot .

- IPTPCHG1(P): Axis 1
- IPTPCHG2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
s +0	Target position change value	_	-2147483648 to	User
s +1			2147483647	0000

Program Example

The following program changes the target position of the axis 1 to 2000 when M0 turns ON.

[Structured ladder]

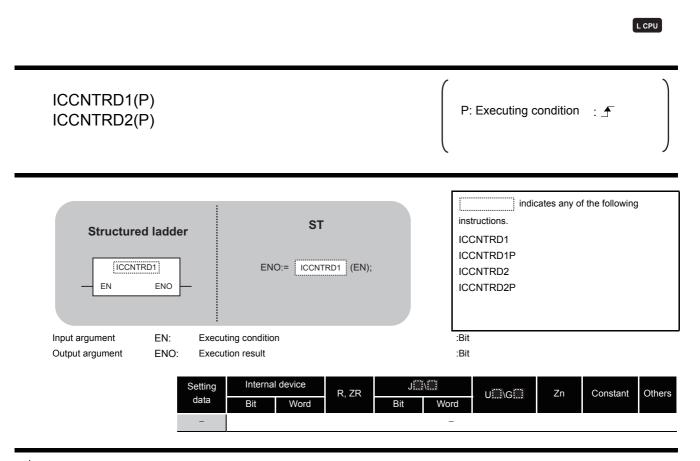
1		
	···M0·································	
	EN ENO - · ·	
	· · · · · · · · · · · · · · · · · · ·	



8.2 Counter Function Dedicated Instruction

8.2.1 ICCNTRD instruction

ICCNTRD1, ICCNTRD2



Grant Function

This instruction stores a value at the time of instruction execution to the current value of the specified CH (refer to the following).

- · ICCNTRD1(P): CH1
- ICCNTRD2(P): CH2

Program Example

The following program stores the most recent value to the CH 1 current value (SD1880, SD1881) when M0 turns ON.

[Structured ladder]



[ST] ICCNTRD1(M0);

8.2.2 ICRNGWR instruction

ICRNGWR1, ICRNGWR2

L CPU

ICRNGWR1 ICRNGWR2	. ,				P: Executing c	condition	: 🛧	
Structure EN s1 s2	ed ladder	ENO:=	ST ICRNGWR1 (EN, s1, s)	2);	ICRNGWR1 ICRNGWR1P ICRNGWR2 ICRNGWR2P	cates any c	f the following	3
Input argument	EN: s1: s2:	the device that stor Ring counter uppe	limit value (constant), or res the ring counter lowe r limit value (constant), o	er limit value or start number of	:Bit :ANY32 :ANY32			
Output argument		Execution result	device R, ZR	JEN Bit Wo	:Bit ord -	Zn	Constant	Others
		S2 -	0		-		0	_

Grant Function

This instruction sets the ring counter lower limit value and the ring counter upper limit value of the specified CH (refer to the following).

- ICRNGWR1(P): CH1
- ICRNGWR2(P): CH2

Program Example

The following program sets -100000 for the ring counter lower limit value and 100000 for the ring counter upper limit value of CH 1 when M0 turns ON.

[Structured ladder]

1	.																							
						·	·	·	·	·	·		·	·	·		ICP	RNG	äWF	R1E	>	1	•	•
	-	-	·	⊢	 	_	 								_	EN	1			E	NO	Ŀ.		
	·		•								-1	00	00	0 —	_	s1								
	·					÷			·	÷	·1	00	00	0 —	_	s2						1.1		
	· ·		÷	·	·	·		·	·	÷	·	÷	÷	·	·						•	•		

[ST] ICRNGWR1P(M0, -100000, 100000);

8

8.2.3 ICPREWR instruction UILT-IN I/O FUNCTION STRUCTION **ICPREWR1, ICPREWR2** L CPU ICPREWR1(P) CPREWR1, CPREWR2 P: Executing condition : 1 ICPREWR2(P) indicates any of the following instructions. ST **Structured ladder ICPREWR1** ICRNGWR1 **ICPREWR1P** ENO:= ICRNGWR1 (EN, s); **ICPREWR2** EN ENO **ICPREWR2P** s :Bit Input argument EN: Executing condition :ANY32 Preset value (constant), or start number of the device that s: stores the preset value Output argument ENO: :Bit Execution result Internal device J....\.... Setting R, ZR Constant Others U....\G.... Zn data Bit Word Word \bigcirc \bigcirc s _ _ _

Grant Function

This instruction sets a preset value of the specified CH (refer to the following).

- ICPREWR1(P): CH1
- ICPREWR2(P): CH2

Program Example

The following program sets 10000 for the preset value of CH 1 when M0 turns ON.

[Structured ladder]

· ·			•	1						•								·			•		• . •		
·	÷Ν	40	÷	÷	·	·		·	÷	·		÷			·	·		IC	PP	E۷	VR1	I		•	
	-1	$\cdot \mid$	⊢													_	E	V.			Е	NC) -		
·	· _	•	•	÷	·	·	·	·	÷	·	·	·	10	00	0 —	_	s							•	
·	÷	÷	·		·			·			÷		·		÷			·			•			•	

[ST] ICPREWR1(M0, 10000);

8.2.4 ICLTHRD instruction

ICLTHRD1, ICLTHRD2

L CPU

ICLTHRD1(I ICLTHRD2(I	-							P: Executing o	conditior	n : _	
Structure EN n		-	ENO:	ST = ICLTHRD	1 (EN, n, c	1);	ir 10 10	indi Instructions. CLTHRD1 CLTHRD1P CLTHRD2 CLTHRD2P	cates any	of the following	g
Input argument	EN:	Executing	conditio	n			:E	Bit			
	n:	Latch cou						NY16			
Output argument	ENO: d:	Execution Start num stored		ne device in	which the I	atch count	:E value is:A				
		Setting	Interna	l device	R, ZR	JĒ.	\	U∭\G∭	Zn	Constant	O
		data	Bit	Word	,	Bit	Word	0			
		n	-	C)		-			0	
		d	_	C			_		0		

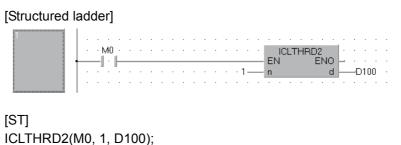
Grant Function

This instruction stores a latch count value n of the specified CH (refer to the following) to ...

- ICLTHRD1(P): CH1
- ICLTHRD2(P): CH2

Program Example

The following program stores the latch count value 1 of CH 1 to D100 and D101 when M0 turns ON.



8.2.5 ICSMPRD instruction



L CPU

ICSMPRD1, ICSMPRD2

0

_

8

ICSMPRD1(F ICSMPRD2(F	-						P: Exe	ecuting c	ondition	: 🕈	
Structured ICSMPF EN		.r	ENO:	ST	01 (EN, d);		instructic ICSMPF ICSMPF ICSMPF ICSMPF	nns. RD1 RD1P RD2	cates any o	f the following	3
Input argument Output argument	EN: ENO:	Execu	ting conditio tion result				:Bit :Bit				
	d:	Start r is stor Setting data	ed	e device in I device Word	which the s	 Int value	U		Zn	Constant	Others

0

Grant Function

This instruction stores a sampling count value of the specified CH (refer to the following) to .

_

• ICSMPRD1(P): CH1

d

_

• ICSMPRD2(P): CH2

Program Example

The following program stores the sampling count value of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder]



[ST] ICSMPRD1(M0, D100);

8.2.6 ICCOVWR instruction

ICCOVWR1, ICCOVWR2

L CPU

ICCOVWR1 ICCOVWR2	. ,				P: Executing c	condition	: 🛧	
Structure EN s		- ENO:=	ST ICCOVWR1 (EN, n,	s);	instructions. ICCOVWR1 ICCOVWR1P ICCOVWR2 ICCOVWR2P	cates any of th	ne following	
Input argument	EN:	Executing condition			:Bit			
	n: s:	Coincidence output Coincidence output	: No. n point : No. n point (constant).	or start number of	:ANY16 :ANY32			
		the device in which	coincidence output No					
Output argument	ENO:	Execution result			:Bit			
		Setting Internal data Bit	device R, ZR Word	J\ Bit Wo	rd UIII\GIII	Zn	Constant	Others
		n –	0		-	0		-
		s –	0			0		_

Grant Function

This instruction stores a coincidence output No. n point of the specified CH (refer to the following).

- ICCOVWR1(P): CH1
- ICCOVWR2(P): CH2

Program Example

The following program sets the value of D100 and D101 to the coincidence output No. 2 point of CH 1 when M0 turns ON.

[Structured ladder]

1																					. •		
			٠ţ	vł0	÷	·	·	·	·	·	·	·	·	·		·	·	•	ICCOV	VR1	1.1	·	•
•	-	_	-1		⊢	_	_	_	_	_	_	_							EN	ENO	E.	·	
															÷		_				1.1	·	•
		•	·		·	·	1	·	÷	1	·	·	1	·	D.	100)—	_	S		1.1	÷	•
		•	·		·	·	•	·	·	•	·	•	•	•	·	•	·				•	•	•

[ST] ICCOVWR1(M0, 2, D100);

8.2.7 ICFCNT instruction

ICFCNT1, ICFCNT2

L CPU

ICFCNT1 ICFCNT2

Structure		_ ENO	ST	·····		ins ICI	fructions. FCNT1 FCNT2	cates any o	f the following	1
Input argument	EN:	Executing condition	on			:Bit				
Output argument	ENO: d:	Execution result Start number of th value	e device that	stores the n	neasured fre	:Bit quency :AN				
		Setting International Internat	al device Word	R, ZR	J Bit	\ Word	U\G	Zn	Constant	Othe
	- 1	- b)		_		0	-	

Grant Function

This instruction measures a frequency of the specified CH (refer to the following) according to the settings such as the frequency measurement unit time setting.

- ICFCNT1: CH1
- ICFCNT2: CH2

The measured value is stored to \bigcirc at the ICFCNT instruction execution. The measurement starts at the rising pulse of the ICFCNT instruction execution command, and ends at the falling pulse.

Program Example

The following program executes the frequency measurement of CH 1 while M0 is ON.

[Structured ladder]

	·		•			·	·	·	·	÷	·	·	·	·	·	·	·	· · ·		•	·			• •	•
	· ·		MO	Ŀ.	·				·					·			÷	ICFC	NT1		· -			•	
•	_	_	Ŀ	F														EN	١З	10	F-			•	
	· ·		•		·	·	÷	·	·	÷	·	÷	÷	·	÷	·	·			d	<u> </u>	-D	100)	
	· ·	·	·	·	·	·	÷	·	·	÷	·	÷	÷	·	÷	·	·		• •			·		•	•

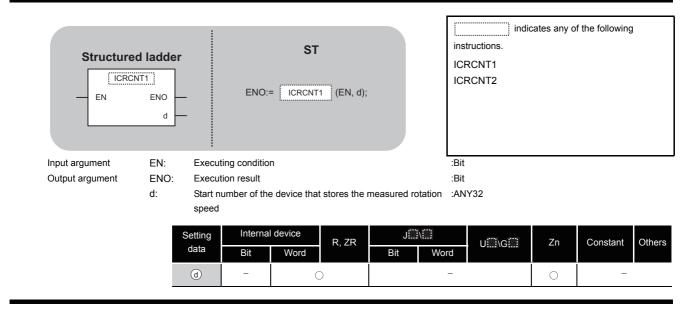
[ST] ICFCNT1(M0, D100);

8.2.8 ICRCNT instruction

ICRCNT1, ICRCNT2

L CPU

ICRCNT1 ICRCNT2



Grant Function

This instruction measures a rotation speed of the specified CH (refer to the following) according to the settings such as the rotation speed measurement unit time setting.

- · ICRCNT1: CH1
- ICRCNT2: CH2

The measured value is stored to (a) at the ICRCNT instruction execution. The measurement starts at the rising pulse of the ICRCNT instruction execution command, and ends at the falling pulse.

Program Example

The following program stores the rotation speed measurement of CH 1 to D100 and D101 while M0 is ON.

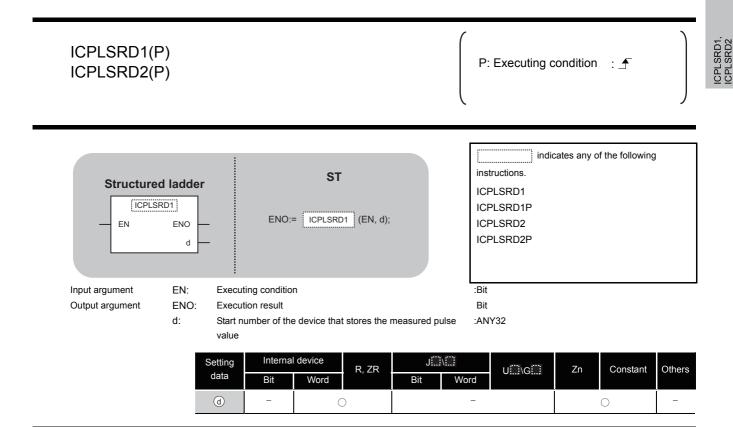
[Structured ladder]



[ST] ICRCNT1(M0, D100);

BUILT-IN I/O FUNCTION

ICPLSRD1, ICPLSRD2



Grant Function

This instruction stores a measured pulse value of the specified CH (refer to the following) to .

• ICPLSRD1(P): CH1

8.2.9 ICPLSRD instruction

• ICPLSRD2(P): CH2

Program Example

The following program stores the measured pulse value of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder]

1	 -1		 	 	ICPLSRD1	
	 · ·	 • •	 	 	d	D100

[ST] ICPLSRD1(M0, D100);

8.2.10 ICPWM instruction

ICPWM1, ICPWM2



ICPWM1 ICPWM2

Structure EN s1 s2	ed ladder	-	ENO:=	ST	(EN, s1, s	2);	ins ICI	indi tructions. PWM1 PWM2	cates any o	of the following	3
Input argument	EN:		ng conditio				:Bit				
	s1:		-	-	alue (consta WM output C		Y32				
	s2:		of the dev	-	value (cons es the PWM	-		Y32			
Output argument	ENO:	Executio					:Bit				
		Setting	Interna	l device	R, ZR	J	\	U∭\G∭	Zn	Constant	Oth
		data	Bit	Word		Bit	Word				
		s1)	-	(C		_			0	_ ·
		s2	-	(C		_			0	

Section 1

This instruction outputs a PWM waveform of the specified CH (refer to the following).

- ICPWM1: CH1
- ICPWM2: CH2

The PWM waveform with the ON time ($_{\odot}$) and the cycle time ($_{\odot}$) is output from the coincidence output No.1 signal during the ICPWM instruction execution. The output of the PWM waveform starts from OFF.

Program Example

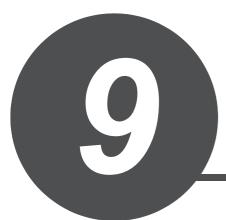
The following program outputs the PWM waveform with 1μ s ON time and 5μ s cycle time from CH 1 while M0 is ON.

[Structured ladder]



[ST] ICPWM1(M0, 10, 50);

MEMO



DATA LOGGING FUNCTION INSTRUCTION

9.1	LOGTRG Instruction, LOGTRGR Instruction	9-2
• • •		-

8

NG BUILT-IN I/O FUNCTION

INDEX

9.1 LOGTRG Instruction, LOGTRGR Instruction

LOGTRG



LOGTRG LOGTRGR			P: Executing condition :
Structure Log EN n		ST ENO:= LOGTRG (EN, n);	indicates any of the following instructions.
Input argument Output argument	EN: n: ENO:	Executing condition Data logging configuration number Execution result	:Bit :ANY16 :Bit

\overleftrightarrow Function

LOGTRG

- (1) The LOGTRG instruction generates a trigger in the trigger logging of the data logging configuration number specified by 'n'.
- (2) A value from 1 to 10 is set for 'n'.
- (3) When the LOGTRG instruction is executed, the special relay (data logging trigger) of the data logging configuration number specified by 'n' turns ON. After executing the trigger logging for the number of times set for "Number of records", the instruction latches the data and stops the trigger logging.
- (4) Validated when "When trigger instruction executed" is selected as the trigger condition.
- (5) No processing is performed with the following condition.
 - Specifying a data logging configuration number for which other than "When trigger instruction executed" is specified as the trigger condition.
 - Specifying a data logging configuration number which is not configured.
 - Specifying a data logging configuration number which is currently used for continuous logging.
 - Executing the LOGTRG instruction again without executing the LOGTRGR instruction after the LOGTRG instruction.

LOGTRGR

- (1) The LOGTRGR instruction resets the LOGTRG instruction of the specified data logging configuration number.
- (2) When the LOGTRGR instruction is executed, the special relay (data logging trigger, trigger logging complete) of the data logging configuration number specified by 'n' turns OFF.
- (3) When the instruction is executed while transferring data in the buffer memory to the SD memory card, the instruction process is held until data transfer is complete.

Operation Error

In the following case, an operation error occurs, the error flag (SM0) is turned ON, and the corresponding error code is stored to SD0.

• The value for n is outside the range of 1 to 10 (Error code: 4100)

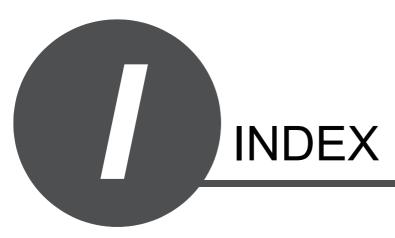
Program Example

The following program executes the LOGTRG instruction on the data logging configuration No. 1 when X0 turns ON, and resets the trigger condition with the LOGTRGR instruction when X1 turns ON.

[Structured ladder]

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[ST] LOGTRG(X0,K1); LOGTRGR(X1,K1);





[A]

ABRST (absolute position restoration)	5-233
Analog instruction	. 2-3,2-11,2-12
Analog module	1-7

[B]

BIDIN (receiving data using bidirectional protocol
communication)5-73
BIDOUT (sending data using bidirectional protocol
communication)5-70
BUFRCV (receiving data in fixed buffer
communication) 5-202
BUFRCVS (receiving data with interrupt program)
BUFSND (sending data in fixed buffer communication)

[C]

CC-Link IE controller network instruction 2-6
CC-Link IE controller network module 1-7
CC-Link instruction
CC-Link system master/local module 1-7
CLOSE (connection closing) 5-199
Configuration of Instructions 3-2
CSET (initial setting) 5-85
CSET (programmable controller CPU monitoring)
CSET (receive data clear)5-76

[D]

Destination	3-3

[E]

ERRCLR (clearing error information)	5-212
ERRRD (reading error information)	5-215
Ethernet instruction	2-6
Ethernet interface module	1-7

[G]

GETE (user frame reading)	5-100
[H]	
HOW TO READ INSTRUCTIONS	4-1
[1]	
I/O number	3-2
I/O number of module	3-2

I/O number of module	3-2
ICCNTRD (current value read)	8-18
ICCOVWR (coincidence output point write)	8-24
ICFCNT (frequency measurement)	8-25
ICLTHRD (latch counter value read)	8-22
ICPLSRD (pulse measurement read)	8-27
ICPREWR (preset value write)	8-21
ICPWM (PWM output)	8-28

ICRCNT (rotation speed measurement)	
ICSMPRD (sampling counter value read) 8-23	3
INPUT (receiving data using nonprocedural protocol	
communication)5-6	7
INSTRUCTION TABLES 2-	1
IPABRST (absolute position restoration)8-1	1
IPDSTRT (positioning start) 8-3	3
IPJOG (JOG start)	9
IPOPR (OPR start) 8-	7
IPPSTRT (tabel start) 8-2	2
IPSIMUL (2 axes simultaneous start)	6
IPSPCHG (speed change) 8-14	4
IPSTOP (axis stop)	3
IPTPCHG (target position change)8-10	6

[L]

LOGTRG (trigger logging set)	9-2
LOGTRGR (trigger logging reset)	9-2

[M]

MELSECNET/H instruction	2-6
MELSECNET/H network module	1-7
Modem interface instruction	2-4
Modem interface module	1-7
Modules and Versions Applicable to Instructions	1-7
MRECV (receiving e-mail)	5-221
MSEND (sending e-mail)	5-226

[N]

Network number	-2
----------------	----

[0]

OFFGAN (mode switching)	5-2
OGLOAD (reading offset/gain setting value)	5-4
OGSTOR (restoring offset/gain setting value)	5-31
ONDEMAND (sending data using the on-deman	d
function)	5-60
OPEN (connection opening)	5-195
OUTPUT (sending data using nonprocedural pro	otocol
communication)	5-64

[P]

PFWRT (writing data to flash ROM)	5-242
PID control instruction	
PIDCONT (PID operation)	6-7,6-21
PIDINIT (setting data to be used for PID o	peration)
	6-2,6-16
PIDPRMW (changing parameter for PID o	peration)
	6-12,6-27
PIDRUN (PID operation start)	6-11,6-26
PIDSTOP (PID operation stop)	6-11,6-26

PINIT (setting data initialization)	. 5-244
Positioning Instruction	. 5-233
PRR (data transmission/reception)	5-81
PSTRT (positioning start)	. 5-237
PUTE (user frame registration)	5-97

[R]

READ (reading data from a word device)	5-137
RECV (receiving data)	5-164
RECVS (receiving data)	5-169
Related manuals	A-8
REMFR (reading data from buffer memory)	5-190
REMTO (writing data to buffer memory)	5-192
REQ (transient request)	5-172
RIFR (reading data from auto-refresh buffer mer	nory)
	5-126
RIRCV (reading data from buffer memory)	5-118
RIRD (reading data)	5-108
RISEND (writing data to buffer memory)	5-122
RITO (writing data to auto-refresh buffer memory	y)
	5-128
RIWT (writing data)	5-113
RLPASET (parameter setting)	5-130
RRUN (remote RUN)	
RSTOP (remote STOP)	5-183
RTMRD (reading clock data)	
RTMWR (writing clock data)	
/	

[S]

SEND (sending data)	5-157
Serial communication instruction	2-4
Serial communication module	1-7
SOCCINF (reading connection information)	7-16
SOCCLOSE (shutting off a connection)	7-5
SOCCSET (changing connection target)	7-19
SOCOPEN (opening a connection)	7-2
SOCRCV (reading receive data)	7-8
SOCRCVS (reading receive data)	7-11
SOCRDATA (reading data from the socket	
communication receive data area)	7-24
SOCRMODE (changing receive mode)	7-22
SOCSND (sending data)	7-13
Source	3-3
SPBUSY (communication status check)	5-75
SREAD (reading data from a word device)	5-142
SWRITE (writing data to a word device)	5-153
[T]	
TEACH (teaching)	5-239
[ບ]	
UINI (re-initialization)	5-218

UINI (switching the mode	, transmission specification,
and host station number).	5-103

[W]

WRITE (writing data to a word device)...... 5-146

MEMO

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WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company. However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing onsite that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

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 1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
 - 2. Failure caused by unapproved modifications, etc., to the product by the user.
 - 3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
 - 4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
 - 5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
 - 6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
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3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

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5. Changes in product specifications

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MELSEC-Q/L Structured Programming Manual

Special Instructions

Q-KP-TM-E

MODEL

MODEL CODE

13JW09

SH(NA)-080785ENG-D(1001)KWIX

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